LITTELL'S LIVING AGE.—No. 147.—6 MARCH, 1847.

EMIGRATION FROM GREAT BRITAIN TO VIRGINIA.

We see in the papers, a notice of the arrival in England, of Mr. Thomas Rawlings, late editor of the Countryman and Emigrant's Friend, New York. Mr. Rawlings' exertions in the cause of emigration, are likely to be responded to far beyond his original calculations. Mr. Rawlings has been addressing public meetings in various parts of the United Kingdom, particularly in Wales and Scotland. He is represented to confine himself to the State of Virginia, as the part of the United States which presents, just now, great inducements to the industrious emigrant. Mr. Rawlings contemplates arranging permanently, an agency in Liverpool, for the sale of land in America, and then returning to New York to superintend its management on that side of the water.

The above is the substance of a statement made in an English paper. Already English emigrants have encouraging examples before them, in the choice and settlement of large tracts of land in Fairfax County, Va., by New York farmers and Germans, who find one great inducement for the change in the cheapness of land, which, although not as fertile as in some of the Western States, makes good returns to thrifty husbandry, and has, withal, the advantage of being near the best markets on the seaboard. The pleasures of social intercourse and the ability to send their children to good schools, are also important considerations.

In Old or Lower Virginia, the emigration of many of the planters and the transportation of the negroes to the south and west, have left much land to be occupied by emigrants at a moderate cost, and now that marl is procurable so readily in almost every district where it is needed, these latter have the means at once of giving fertility to a worn out soil, and by the adoption of a better system of farming, in rotation of crops, &c., insuring for themselves a fair return, in a genial climate, for their outlay of labor and money.

In the valley of Virginia, between the Alleghany and the Blue Ridge, the emigrant who has some money at his command, can procure land at a fair price, with improvements and the needful appliances for profitable farming. He will find himself, also, surrounded by people whose habits and opinions are congenial with his own, and who, although they live in a slave state, have few, many of them no slaves, nor have they any sympathy for slave institutions, but look forward to the time when a constitutional change will take place, formally securing the abolition of slavery within the boundaries of the Old Dominion. The elements are now in process of combination towards the formation of this great work, which, let it be understood, will be carried on solely under Virginia counsel and deliberations.

The region bordering on the Alleghany and declining to the south and west to Kentucky and Tennessee, has a fine climate and land admirably adapted to the culture of grain and to pasture. Some of the counties are among the finest in the Union for the raising of sheep.

Encouragement to the friends of emancipation, and they are not confined to the free states so called, is afforded in the altered proportions between the white and black population of Virginia, from 1830 to 1840. The white increase during that period, was 43,500, the black decrease, 22,500, showing a gain on the side of white labor of 63,000.

It is easy to see the effect on slavery, in Lower Virginia, of the gradual and peaceful substitution of northern American and European farmers and white laborers, with their improved tillage and habits of thrift and economy, for the old planters and their crowds of profitless slaves with the almost inevitable concomitants of profusion, waste and decay. These views, and facts of this nature, and they are not confined to Virginia, pressed upon the attention of our people here at home, and more especially on those of Great Britain, by rational and honest abolitionists, in place of the incendiary, extravagant and false declarations uttered continually by certain American and British itinerant lecturers, the cause of humanity as connected with the abolition of slavery would be a vast gainer and the people of the two countries made to cherish and nourish more friendly and Christian feelings towards each other than now exist.—*Colonization Herald.*

From the Colonization Herald.

SLAVERY

AS RETARDING THE ACCUMULATION OF WEALTH AND INCREASE OF POPULATION IN THE SOUTHERN STATES.

This subject is discussed with ability by a Carolinian, in a pamphlet of 27 pages, just published in Washington. In this pamphlet we observe no allusion to slavery in its relations to natural justice, or moral obligation; but the writer limits his view to the "politico-economical" aspect of the system, and on that account, it is probable, his facts and opinions may, at the south, be more candidly considered. It may be of interest to present, in a condensed form, the principal facts and arguments adduced by the author, in evidence that slavery is the prominent cause retarding the accumulation of wealth and increase of population in the southern states.

The fourteen slave-holding states contain an area of six hundred and eighty thousand square miles; whereas the fourteen free states, together with Iowa and Wisconsin, contain only four hundred and fifty thousand square miles. The climate, mineral resources, soil and agricultural advantages, of the slave-holding country, especially considering that cotton, tobacco, sugar, and rice, are almost exclusively productions of the south, are equal, if not superior, to those of the north; yet the towns, cities, and general improvement of the latter greatly exceed that of the former, and there is a much larger population upon a much smaller territory. In 1790, when the first census was taken, the population of the south was little behind that of the north; and owing to the greater breadth of frontier which lay contiguous to the southern states, and

the presence of war like Indians, retarding settlements in the north-west, Kentucky and Tennessee sprung into existence before any one of the north-western states. At the end of fifty years from the origin of the constitution, we might have expected then the population of the south to have exceeded that of the north, but the reverse is strangely true.

If we compare contiguous parts of the north and south with each other, say New York and Virginia, the contrast, in regard to their progress in wealth and population, becomes more striking. The territorial extent of New York is estimated at fifty thousand square miles; that of Virginia at sixty-five thousand. If the harbor of Norfolk is inferior to that of New York, Virginia finds compensating advantages in a more genial climate, and more numerous facilities of interior communication. In 1769 Virginia contained a population of seven hundred and forty-seven thousand, and New York only three hundred and forty thousand. But the census of 1840 shows the astonishing fact, that the population of New York is within a small fraction of being double that of Virginia—being at 2,429,009 to 1,240,000.

Pennsylvania lies remote from the Atlantic, and is far inferior to Virginia in facilities of natural communication—yet the comparison between this state and Virginia, though less striking than between New York and Virginia, is much to the advantage of the former.

In 1780 Kentucky contained seventy-five thousand inhabitants, and Ohio but three thousand. In 1840 Ohio had a population of 1,520,000, and Kentucky only 780,000. The general improvement of the face of the country, the construction of roads and canals, agricultural improvements, public and private buildings, the growth of towns and cities, in the States of New York, Pennsylvania, and Ohio, seem to be more than commensurate with their increase of population, if compared with the condition of things in Virginia, and Kentucky.

But how has slavery been such an obstacle to the improvement and population of the Southern States?

If a farmer in Ohio owns one hundred acres of land, with the cattle, the food to subsist them, and utensils of husbandry necessary to its tillage, he will, as is obvious, be able to enter upon its cultivation with an additional ready capital, sufficient to supply his laborers with maintenance. Thus, if the food and shelter of a free laborer be worth fifty dollars per annum, and one laborer be necessary to the cultivation of ten acres, then five hundred dollars will be the additional capital necessary in the case above supposed. The laborer's wages invariably come out of the sale of the crop, and consequently there existed no necessity for the employer to have it by him.

The illustration may be varied by estimating the amount of capital necessary to the making of a given product—one hundred bales of cotton, for instance. If, as is asserted, one man can produce ten bales of cotton—of course the product per hand is immaterial to the illustration—then the capital necessary to the production of one hundred bales, apart from the land, etc., as above, will be five hundred dollars.

I will now inquire the amount of capital necessary to employ slave labor in the cultivation of one hundred acres of land, or the production of one hundred bales of cotton. If men slaves are worth seven hundred dollars, and the food and clothing of a slave fifty dollars per annum, the cultivation of one hundred acres of land by the labor of ten slaves, in Alabama, requires a capital of seven thousand five hundred dollars, apart from capital invested in land, cattle, &c., as above. Or the production of one hundred bales of cotton by slave labor, requires a capital of seven thousand five hundred dollars, apart from the value of land, &c. I have based the illustration, for convenience, upon the supposition that the labor of men only is employed, but it is obvious that the principle is true generally of all free and of all slave labor.

The author reckons the average cotton crop of the United States at 2,000,000 bales; and supposing the labor of men slaves alone employed, at the prices above specified—the product, price of provisions, and clothing, the same—the number of slaves employed would be 200,000, and the capital necessary to employ them $150,000,000, including the value of the slaves, and the cost of their yearly maintenance. But the ready capital in the production of the crop by free labor, apart from the value of land, cattle, utensils, &c., will be $10,000,000, which is the sum necessary to feed and shelter the laborers for twelve months. In this case the ready capital necessary to employ slave labor, is, to that required to employ free labor, as 15 to 1. But this ratio is upon the condition that the value of the lands, cattle, and implements of husbandry, are the same in the two cases. Thus, in the cultivation of one hundred acres of land, the ready capital required to employ slave labor, at the rates supposed, is $7,500. Add to this the value of the land at ten dollars per acre, $1000, cattle, provender, utensils, $500, the whole amount of capital employed becomes $9,000. In the cultivation of the same by free labor, the whole capital required would be—shelter and provisions for the laborers, $500; value of the land, $1,000; cattle and utensils, $500; total, $2,000. But if the land were worth one hundred dollars per acre, then the capital becomes, where slave labor is employed, $18,000, and free labor, $11,000—or something more than 3 to 2.

In the case of 100 acres of land at ten dollars per acre, cultivated by ten men, the difference in capital necessary between the employment of slave and free labor is $7,000, the value of the slaves. Now, observes the author, if a free laborer be estimated to be worth as much to himself as the slave to his master, the agricultural operation with free labor may be regarded as a joint stock or partnership business, in which the employer invests two thousand dollars, and each laborer seven hundred, or the ten, seven thousand, which would make the capital equal to that where slave labor is employed.

The author next proceeds to contrast the amount of capital demanded in conducting manufacturing establishments with slave labor at the south, with those carried on with free labor at the north. The York Cotton Manufacturing Company at Saco, Maine, has a capital of about one million dollars; and employs 1200 persons. The cost of 1200 slaves at seven hundred dollars each, about the present price, would be $840,000. The capital in this establishment, if worked by slaves, would be 1,840,000. "It is true," says the author, "that the employer of slave labor would be exempt from the payment of wages, though not from the charge of maintaining his slaves; and in view of the consideration above adverted to, that there would be no necessity for keeping in hand the whole business capital spent in the year, I think little abatement need be made on that score. At any rate, not

more than 40,000 dollars, which would leave the slave-holder's capital 800,000 dollars greater than that of the Saco company.

I have here supposed that a slave would do an equal amount of work with a freeman, while the experience of men in every department of industry proves the contrary. It has grown into a proverb in the southern states, that the labor of a white man is worth that of two slaves. At that rate it would require a large addition to the above estimate of the capital necessary to carry on manufacturing with slave labor. If in the simplest agricultural operations there exists such a disparity in the efficiency of free and slave labor, it must, in the nature of things, be still greater where skill and intelligence are requisite, as is the case in manufactures. Supposing it practicable to employ slaves extensively in manufacturing, it will hence be necessary to procure the most intelligent and faithful, and consequently such as command the highest prices. But notwithstanding that so large a capital is necessary to employ slaves in manufactures, an investment of that kind may yet be profitable. The excess of capital, which consists in the value of the slaves, though it produces nothing, saves the payment of wages. It may, in that way, yield as large a dividend to the owner as his other investment. I, however, find, by Mr. Walker's report, that southern manufacturers almost invariably use hired labor—free generally, no doubt.

It is not my purpose to show that manufacturing at the south is impracticable; on the contrary, I incline to believe that the coarser fabrics may be made there with much advantage to the capitalist, and to the community. But the fact that slavery absorbs the great bulk of southern capital must always present an obstacle to extensive operations. So it is with commerce and all the other interests. They all exhibit a dwarfed or deformed appearance in comparison with similar occupations in free countries. Even agriculture, which is more profitable in the south than almost anywhere in the world, is conducted in the worst way imaginable. Slavery sits, like the old man of the sea, upon the necks of the people, paralyzing every effort at improvement. This I shall show, in another place, is not, as is commonly supposed, attributable to inertness or indolence, but to slavery, as an unproductive absorbent of capital.

Of the production of sugar the author remarks:

I have not been able to find a distinction drawn, in the accounts of the production of sugar, between the value of slaves and of real and other capital invested. But it is stated that the whole capital engaged in the production of sugar, in 1840, was fifty millions of dollars; and that fifty thousand slaves of all ages are employed on the estates. Suppose the slaves to be worth $400 each, their aggregate value will be twenty millions, which is an unproductive capital. But in the sugar growing business, a great number of free laborers are employed, directly or indirectly. If all such persons were slaves, the capital unproductively employed in that branch of industry would bear a much larger proportion to the whole.

I have used the phrase "unproductively employed" for convenience, but without a proper regard to accuracy. Capital invested in slaves cannot be said to be employed. The food and clothing of a slave is a productive investment, because it is an essential outlay; but this value as property cannot contribute anything to production, for the reason that the destruction of the property by the liberation of the slave would in no degree destroy the efficiency of his labor.

The author contends that all the wealth of individuals which has assumed the shape of slavery, since it has added nothing to production, has added nothing to the resources of the state or nation. He says:

It adds nothing to the taxable value or productive energies of the country; and yet has been accumulated without the same expense of capital and industry which are necessary in producing other species of wealth. The abolition of slavery, therefore, while it would be attended with much individual loss, if effected without compensation to the owner, would destroy none of the resources of the country. It would possess the same labor, and the same land and other materials to employ it—the same means and stronger motives—the hope of gain in a greater number. The tax which the slave bears as property, he would be equally able to pay in the character of a free citizen. The military strength of the country would be augmented, not simply by the number of slaves manumitted, but by that number, together with the number of freemen which would now be necessary to hold the slaves in subjection. Slavery merely serves to appropriate the wages of labor—it distributes wealth, but cannot create it. This will be regarded as a strange peculiarity of slave property; that it is actively employed in productive pursuits, and yet yields nothing. The reason is this: It is the necessity which exists of appropriating the brute creation, and all inanimate substances, in order to render them productive, and the absence of that necessity with regard to human beings.

The ox never voluntarily assumes the yoke, nor the horse the saddle—both require a master to give them any agency in the production of wealth—and the same is true of all inanimate substances. But man, as all experience proves, will labor more assiduously in the accumulation of wealth, under the incentive of interest, than at the bidding of a master—the hope of gain having a more salutary effect upon him, than the fear of punishment.

Since property invested in slaves is unproductive and useless, as is apparent from the above reasoning, the direct effect of its admission into any state, is, consequently, to divert the energies of the people from its improvement. But slavery is not simply unproductive; it has a peculiarity which belongs to no other species of unproductive capital. It substitutes the place of free citizens by supplying all the demands for labor; and yet the substitute, as I have demonstrated, requires several times more capital to furnish it than is necessary to obtain a supply of free labor. Thus, if a cotton planter of Alabama desires to extend his operations by the cultivation of an additional hundred acres, with ten additional laborers, (the same suppositions remaining,) he must first accumulate nine thousand dollars. But if the farmer in Ohio, of equal means, should desire to extend his operations in equal degree, it would be necessary for him to accumulate only two thousand dollars for that end. Or if a citizen of New York should emigrate to Ohio with two thousand dollars, a number of laborers would thereby be induced to follow him, or he would add as much to the population and resources of the state, as would be added to those of Alabama by an emigrant from Virginia with a capital of nine thousand dollars. This, of course, supposes, as before

remarked, that slave labor is exclusively employed in Alabama, and that the price of land is the same, ten dollars per acre, in the two states.

The slave population of Virginia, in 1840, amounted to within a fraction of four hundred and fifty thousand. They have been acquired, like other species of property, by the joint operation of industry and capital; and if the average value of the slaves be three hundred dollars each, the sum of their value will be one hundred and thirty-five million of dollars. Had slavery never been admitted into Virginia, the wealth which at present exists in that shape would of course have assumed some other—and would now appear in the form of improved lands, better and more numerous houses, towns, cities; more commerce and manufactures, and in the place of the four hundred and fifty thousand slaves would have been supplied by nearly five times the number of free citizens, as I have demonstrated above. Such an addition to the present free population of Virginia would place her, in point of numbers, before any state in the union. But if the immense amount of wealth in slave property which has been taken to the southwest could be taken into computation, the population of Virginia would at this time have exceeded that of her sister states in a degree proportionate to her superiority of numbers fifty years ago.

This pamphlet by a CAROLINIAN, deserves the profound consideration of the south, and of philanthropists and political economists everywhere.

LETTER ON AMERICAN SLAVERY.

ADDRESSED TO THE EDITOR OF THE EDINBURGH "WITNESS," JULY 8, 1846, BY AN AMERICAN.*

MR. EDITOR—Will you permit an American, who is casually sojourning in Scotland, to say a word on the subject connected with his own country, which is exciting so much discussion at this moment: I mean American slavery! If the good people of Scotland are to act in reference to this great evil, it is certainly desirable that they should understand its history; and especially,

1. They ought to know that the curse of slavery was inflicted upon the American States by Britain, while they were her colonies, in opposition to the repeated and earnest remonstrances of the colonists.

2. They ought to know that the great anti-slavery movement, which is now going over the world, originated in America; and that Britain, in her negotiations for the abolition of the slave-trade, and in her laws for the abolition of slavery, merely followed the example of the Northern States of the American Union.

3. They ought to know that impartial justice, in awarding honors for praiseworthy anti-slavery action to the different branches of the Anglo-Saxon family, must bestow the laurel, not on Britain, not on the Northern States of America, but on a noble band in those very slave-holding states of Maryland and Virginia, on which ultra-abolitionists in Britain and America are accustomed to heap unmeasured and undiscriminating abuse.

4. They ought to know that slavery was so deeply rooted in the Southern States of America, while they were under the dominion of Britain, that the rapid eradication of it by merely moral means would be the greatest moral miracle that the world ever witnessed.

* Sidney E. Morse.

If these assertions are true, I think you will say, Mr. Editor, that it is important, at this time, to show that they are true; and although I have not access here to the documents which would enable me to go as minutely into the matter as I could wish, I will, with your leave, amplify a little under each of these heads.

1. That the slaves were introduced into the present American states by Britain, while they were her colonies, is generally known to readers of history. It is not so generally known that this was done in opposition to the remonstrances of the colonists. The evidence of this fact, however, has often been published in America; and it is well known there that, in the first draft of the declaration of American Independence, Mr. Jefferson introduced the refusal of Britain to heed those remonstrances as one of the justifications of that declaration. The wise men of Virginia and other slave-holding states, at an early period foresaw the ruin with which slavery threatened their beautiful country, and sought to avert it by petitioning the British Parliament to stop the importation of slaves; but Parliament was then deaf to the voice of humanity; and Africa was robbed of her sons, and America doomed to suffer for ages under the most grievous of all curses, that British slave-traders might live in palaces, and revel in luxuries, bought with the price of human blood, and the devastation of two continents.

When the first slaves were landed in Massachusetts, more than two hundred years ago, the people of that colony were so indignant, that they fitted out a vessel, put the slaves on board, sent them back to Africa, landed them on the coast, near the spot from which they had been taken, and passed a bill in the colonial legislature, making man-stealing felony without benefit of clergy. But, unhappily, Massachusetts was then a colony, and this act, and all her anti-slavery acts, were frustrated by the refusal of the mother country to ratify them. Massachusetts was compelled to suffer cargoes of slaves to be landed and sold on her shores; and at the period of her independence, seventy years ago, there were in her territory some thousands of these slaves, who were then, when she formed her own constitution, instantly emancipated.

2. It must be a consolation to all who sincerely desire the abolition of slavery in America, to know that the hatred of slavery there is more ancient, more deeply rooted, and bore earlier and better fruit, than in Britain; and that when the fanaticism of the American ultra-abolitionists (which places the great body of the people of that country in a false position before the world, and has given slavery recently some lamentable triumphs) shall pass away, we may confidently expect to witness in America achievements of anti-slavery principle more glorious than any that the world has yet witnessed.

We have already stated that the people of Massachusetts, two hundred years ago, sent back the slaves to Africa; that they made repeated attempts, while subject to Britain, to put a stop to the slave-trade; and that, when they became independent, they abolished slavery, not gradually, but instantly. The abolition of slavery in Massachusetts was not by statute law, but by declaration in public convention, that all men are born free and equal; a declaration which her courts have always regarded as equivalent to the assertion that no statute was needed to abolish slavery on her soil; that slavery

had always been forced upon her by Britain; and that when the dominion of Britain ceased, slavery ceased.*

The other Northern States of America did not take as high ground as Massachusetts; but laws for the abolition of slavery had been passed in all these states, which embrace more than two thirds of the white population of the American Union, long before the question of the abolition of slavery in the West Indies was agitated in Britain.

In 1788, when the present constitution of the United States was formed, all the great maritime powers of Europe, including Great Britain, were actively engaged in the African slave-trade; and scarcely a murmur was heard against that infamous traffic, even among good Christians in England and Scotland. And yet, at that time, of the thirteen sovereign and independent states in America, *eleven* were ready to vote for its immediate abolition, and only two, South Carolina and Georgia, withheld their consent. These two were finally prevailed upon by the rest to permit an article to be inserted in the new constitution, conferring upon Congress the power to abolish the trade after a period of twenty years. This negotiation with South Carolina and Georgia was the first negotiation for the abolition of the African slave-trade. The negotiations of Great Britain with Spain, Portugal, and France, were not commenced until long afterwards.

3. The most praiseworthy manifestations of anti-slavery principle, and the greatest sacrifices in the anti-slavery cause, yet made in any part of the Anglo-Saxon world, have been made in the slave-holding states of America.

The abolition of slavery in the British West Indies was a noble deed, but the principal sacrifice in that case was the sacrifice of the West India proprietors, who made it reluctantly, and only in obedience to the vote of a Parliament in which they were not represented. The abolition of slavery in the northern states of America has the merit, that it was effected at a time when Britain and the whole European world were unblushing supporters of slavery and the slave-trade; and in Massachusetts, the act had the crowning grace that it was done instantly, and in the indignant manner that became a religious and high-minded people in dealing with such a question. But in all the American states which have abolished slavery, the slaveholders, although represented in the legislatures and conventions, were so few in number, that opposition, if they had made it, would have been of no avail; and negro emancipation, therefore, wears there the ungracious aspect of a sacrifice forced from the slaveholder by the vote of men who themselves suffered no loss. It is only in the slave-holding states of America, where no law requires emancipation, that the noble deed was the free-will offering of men who themselves bore the whole burden and cost of the sacrifice. In these states there were, in 1840, 215,580 free blacks, whose value as slaves, at £100* each, would be £21,558,000—a sum greater than that paid by the people of Britain for emancipation in the West Indies. This is the sacrifice on the altar of anti-slavery principle made in the slave-holding states of America, not by men who were compelled to it by a vote of a Parliament in which they were not represented—not by men who could put their hands into the richest treasury in the world, and pay out such a sum without feeling it—but by volunteers, most of whom by their noble act reduced themselves and their families from affluence to poverty.

Of the 215,000 emancipated blacks, 62,000 are in Maryland, a little state, with a white population scarcely greater than that of your city of Glasgow. What do you think, Mr. Editor, of a few thousand individuals, in so small a community, making a voluntary sacrifice of property to the amount of more than £6,000,000, out of regard to anti-slavery principle? Is there any parallel to it in the history of emancipation in the British empire? Is there any parallel to it in the history of the world? This sacrifice, let it be remembered, was a sacrifice of property and power inherited from ancestors who acquired and held it under all the sanctions of British law. If it could be demonstrated that the surrender by the British aristocracy of the property and power which they hold under the same law would greatly benefit their country and mankind, how many of them, think you, would imitate the example of the aristocracy of Maryland, and, solely from regard to patriotism and principle, make themselves and their children poor and powerless!

Would you not expect, Mr. Editor, that facts so encouraging to all who sincerely desire the abolition of slavery in America, as those I have stated in this article, would be often repeated, and dwelt upon with delight by the speakers at your anti-

* Massachusetts, which thus gloriously led the way in the anti-slavery war, is also distinguished for having taken the lead in many other great and good enterprises. The *first Protestant mission to the heathen* was that of the Plymouth colonists, who planted this state in 1620, and assigned as their principal reason for going to America, "that they might preach the gospel of Jesus Christ to the poor heathen in that land." The *first translation of the Bible* by an Anglo-Saxon into a heathen tongue, was the translation, by the celebrated John Eliot, into the language of the Massachusetts Indians. The people of Massachusetts were the first to adopt and fully carry out the principle that *every child in the land must be educated*. Their present admirable school system dates from the first settlement of the colony, more than 200 years ago. The great *temperance reformation*, which is now extending over Europe, originated in Massachusetts, and is more thorough there than in any other country. This little state, with only one fourth of the territory, and a little more than one fourth of the population of Scotland, has more ships, more seamen, more extensive fisheries, more miles of substantial rail-road, connecting the capital, in the most perfect manner, with every part of the territory, fewer drunkards, fewer paupers, a more abundant and equally-distributed supply of the substantial comforts and conveniences of life, more flourishing common schools, high schools, and colleges—more, in short, of all the elements of national wealth and respectability in the bud, than any district of equal population on the globe. The people of this state are entirely unanimous in a deep abhorrence of slavery. They hate it with a perfect hatred. They regard it as the great enemy of their country. They are ready to enlist with their whole heart and soul in any rational war against it; but they will not engage in a crusade, on the principles, in the spirit, or under the lead of the ultra-abolitionists. They hate slavery, but they love their Christian brethren in the slaveholding states, and have great confidence in their patriotism and piety. In the seven years' war for her own liberty, Massachusetts fought side by side with her sister states of the South, under George Washington, of Virginia, who was nominated to the command by John Adams, her own leading patriot; and in the great moral war with slavery, she would choose, on every account, to put southern men in command; she would hope again to find some noble Virginian, who would be able to exhibit, among other qualifications for the office of commander-in-chief of the anti-slavery host, that best of all proofs of true zeal and devotedness in the good cause, a willingness like Washington to emancipate his own slaves.

* It was recently stated by an American abolitionist, at an anti-slavery meeting in London, that the value of American slaves varies from £160 to £200. We think it safe to say £100.

slavery meetings, and the writers in your anti-slavery publications? I have attended, sir, many of these meetings since I arrived in Britain, and have read many of these publications, but I have not heard an allusion to one of them. All that I have read and heard is calculated to leave the impression, that anti-slavery principle and anti-slavery feeling in America are confined to a little band of choice spirits in the non-slaveholding states, whom they call, and who call themselves, the abolitionists; but with whom, permit me to say, the real abolitionists of America—by which term I mean here the body of noble-minded men in Maryland,* and other states, who have actually emancipated their slaves, have no fellowship and no sympathy.

4. Few persons have any adequate conception of the firmness with which slavery was rooted in the southern states of America, while they were under British dominion. If the importation of slaves had been stopped when the wise men of the south first remonstrated against it, slavery might long ere this have been abolished there by vote of the legislatures, as it was in the north; but the importation was driven on until the slaveholding interest overwhelmed and controlled all others. More than half of the population in all the low country of those states are now negro slaves; while all political power is in the hands of the other half, the great majority of whom are slaveholders and their dependents. Each of these states has the exclusive control of slavery within its own limits. Neither the government of the United States, nor the government of any of the northern states, can meddle with the matter in any way. If slavery is abolished in any state, it must be by the vote of the legislature of that state—a legislature, the majority of whose members are ordinarily themselves actual slaveholders; it must be by the vote of a body of wealthy and powerful men, who will by that vote deprive themselves of the wealth and the power which they inherit from their ancestors. This is an entirely new case. It is not the case of slavery in the West Indies—it is not the case of slavery in the northern states of America. Slavery was abolished in those countries by legislatures in which there were few if any slaveholders. That was an easy task. We have now to solve a far more difficult problem:—How shall we contrive to abolish slavery in a country where nothing effectual can be done without the consent and active coöperation of the actual slaveholder? Shall we begin with denouncing him? Shall we refuse to have any fellowship with him? Shall we shut him out of our prayer-meetings and temperance-meetings? If he is disposed to sympathize with us, and offers us money to help us in our necessities, shall we throw it in his face? And to make him feel how reasonable it is that we, of all people in the world, should treat him so, shall we tell him that we are Britons—that we belong to the country which forced this slavery upon him—that we live in houses built with the money which he paid us for these slaves, and that we mean still to live in them, while we call upon him to give up the property we sold him, as he can have no good title, because we stole it? Is this the way that British Christians are to deal with American slaveholders!

No; the abusive, denunciatory, non-intercourse policy will not do. The ultra-abolitionists in the northern states of America have tried it for more than ten years, and the result has been just what all men of plain common sense predicted. All the while that this abolition storm has been blowing from the north, the southern slaveholder has stood with his cloak wrapped closely about him, and we do not expect to see him throw it off till the storm subsides, and the sun of Christian love again shines warmly upon him. Every high-spirited people instinctively resist foreign interference in their affairs. If that interference comes in the shape of moral rebuke, they will naturally look sharply at the party who administers it; and if they see there, as they would see in the present case, one whom they deem more guilty than themselves—one who led them into their sin, and who has profited by their sin—the thief, in short, who sold them the stolen goods which he now calls upon them to restore—they will not tolerate, in such a reprover, the arrogant language of the Pharisee: "Stand by thyself, for I am holier than thou," but will require him to approach in the attitude of the humble penitent, confessing and grieving for the wrong he has done, and offering to do all in his power to repair it. If Britons would aid in abolishing American slavery, let them go in that attitude, and with the language and tone that become that attitude; and the force of their rebuke, in the bosom of every truly Christian slaveholder, would be irresistible.

S. E. M.

* A few weeks since I attended the great anti-slavery meeting at Finsbury Chapel in London, called by Mr. George Thompson, for the avowed purpose of bringing public sentiment in England to bear upon the Free Church in Scotland, and compel it to send back the money contributed for its relief in the slaveholding states of America. Allusion was indeed often made, by the speakers at this meeting, to *Maryland*, but it was always in connection with something *discreditable* to the state, (for it seems that, after searching the statute-books, the newspapers, and all the records of the state, from its first settlement down to the present time, some discreditable things have been discovered,) and when the orator had held up these deformities to the public gaze, and commented upon them till the audience were sufficiently inflamed, and began to cry out, "Shame! shame!" he took care to add, "and the American minister at the court of St. James is from this state," that the reproach of Maryland might thus be extended to the whole of America. Now, it is true, Mr. Editor, that Mr. M'Lane, the American minister at the court of St. James, is from Maryland; and it is true, too, that he is one of the noble band of real abolitionists in that state, who long since reduced himself to poverty by emancipating the slaves which he and his good lady inherited from ancestors, who held them under laws made by Britain and forced upon Maryland while she was under British dominion! But it did not suit the purpose of those who got up this sort of anti-slavery meeting to let such a fact be known. The object of Mr. Thompson and his associates was to show that the wicked Americans were so inveterately attached to slavery, that it would be wrong in their mother Britain to suffer them to relieve the distressed, build churches, support ministers, attend temperance conventions, Christian conventions, prayer meetings, or any other means of grace, until they had repented of the sin of slavery.

At this meeting one of the speakers quoted the fine passage from Curran, containing the sentiment "that there can be no slavery in Britain—that the fetters of the slave fall from him the moment he touches the sacred soil of Britain," &c., and the deafening shouts with which the passage was received, showed the proud feeling excited in the bosom of Britons by this great boast of their country. I could not but think, however, that at the very moment when the court decided the case of Somerset the slave, upon which that boast is founded, Britain was forcing slavery upon all her colonies in the New World. And what are we to think of a mother, with a poisoned cup in her hand, boasting that she would not for the world touch it to her own lips, and yet forcing her children to drink it to the dregs! Is her boast anything but that of a murderer who has too much sense to commit suicide?

THE SMUGGLER'S LAST FIGHT AND DEATH.

Billy Combe was as bold and dashing a fellow, as gay and handsome, as fearless and as careless, as ever wore a pig-tail, chewed tobacco, swore an oath, or kissed a pretty girl without first asking her leave. He figured upon the earth and sea, for on either element he was equally at home, somewhere about sixty years ago, more or less. There is no necessity to be very exact about dates.

It must not be supposed from anything I may say that Billy Combe was an immoral character; he at least considered himself the very pink of correctness when judged by his own code of morality, though it must be acknowledged by his warmest admirers that the said code was a very lax one according to the notions generally held by the stricter portions of society at the present day. Billy argued that if no laws existed, there could be no crime; and that of all laws, strict revenue laws and high duties being most detrimental to the state, he not only did not feel himself called upon to subscribe to them, but to oppose them to the utmost of his power. This he did most effectually—in truth, he was one of the most daring and successful smugglers on the coast of Hampshire.

"These laws make smugglers just as game-laws make poachers. Do away with one, and the other—why, Lord bless ye! the smuggler, in the turn of a marline-spike, becomes an honest trader, and the poacher a free sportsman." Billy used to say, "Ruby lips are made to be kissed, just as ripe fruit is intended to be eaten Who ever asks a juicy peach whether it would like to be picked? and I sees no reason why I should ask a buxom girl whether she 'd like a buss. Bless her pretty eyes! it 's her natur—she can't help liking it—I knows that well enough. If she says anything I always gives her another, just to make her accustomed to it, and she soon comes round—ha! ha! ha!"

And he used to chuckle at the thoughts of his past performances in that line.

If Billy Combe had, like other men, his faults and failings, he had, which is all that can be said for the best of us, his good qualities also. He was generous in the extreme; he never turned a beggar away with a surly frown and without a groat, and while he had a shot in the locker it was at the service of a shipmate. His word was as good as his bond, which is as much as the proudest merchant can say; in some cases, among that class, one is worth as much as the other, namely, nothing; but Billy's word was never broken, and of bonds he knew nothing. Stanch to his friends, and to those who put confidence in his honor, he would rather have died like the Indian at the fiery stake than have betrayed one who trusted him. Honest in all his dealings, when he made a bargain it was a fair one. He would have disdained to take advantage of another man's embarrassments, and scorned the thought of *doing* any one.

"Oh ye high and mighty ones, ye wealthy merchants revelling in luxury, ye lawyers with your flowing wigs, ye doctors with your long faces, ye jockeys whose conversation is of horse-flesh, ye rulers of the land, foreign ministers, home ministers, and would-be ministers, can ye say as much for yourselves!"

Thus used Billy occasionally to exclaim when, during his moments of relaxation, with pipe in his mouth, he indulged, like other great heroes, in the pleasure of boasting of himself and his deeds.

The only people he *did* were the revenue officers, and them he *did* with a vengeance; but at the same time, he considered such *doing* all fair and above board.

He acknowledged himself to be a smuggler; he never concealed the fact from any one; he gloried in smuggling; it was his profession, his business, his delight, his amusement; he gave full notice that he should smuggle on to the end of his days, or till the revenue laws were abolished, and even in that respect he kept his word. They might catch him if they could, but that was not so easy a matter. If caught, he was ready to undergo the penalty.

This once happened. Billy, clever as he knew himself to be, once, as other clever people had done before, made a mistake. His mistake was supposing that there were no revenue boats near, when there were two, well armed, close at hand; and he was caught napping in consequence on board a lugger with a full cargo of tubs in her.

His day was come—there was no help for it—he was a prisoner, but, like a man, he was not cast down—not he; he laughed and joked, and sang as stoutly as ever. He was taken on board a man-of-war, and offered his choice, to go to gaol for a year, with hard labor, or to serve his majesty for the same period. Billy was a sailor, every inch of him.

"Serve his majesty—of course I will—God bless him," he exclaimed, and he thus became a man-of-war's-man. But now arrived the most cruel cut of all.

"I admire your spirit, my man," said the officer. "You promise to serve his majesty, and you shall forthwith do so. As a reward for your willingness, you are appointed first mate of his majesty's cutter, Scourge, employed in the revenue service. Here is your warrant."

"I would rather go to prison," said Billy.

"You have promised to serve his majesty," answered the officer.

"Oh, if that was understood," cried Billy, "so I will. Look out for squalls, my hearties," he exclaimed, turning round to where he saw several of his friends standing who had come to attend his trial. "I have promised to serve his majesty, and I intend to do my duty. You knows me. Remember, too, I knows you, and all your dodges; but don't expect any favor from me—so I says, look out for squalls."

Having delivered himself of this harangue, Billy went on shore to make some necessary arrangements, and soon afterwards trod the deck of the Scourge as an officer. He was as good as his word. The cutter went to sea that afternoon, and the very next night made a rich capture of tubs of spirits and bales of silks. She soon became noted for being the most successful cruiser on the station, and at the end of the year had made more captures than she had done during all her previous career. So delighted was the commander of the Scourge with his success, owing to the large amount of prize-money he received, that he did his utmost to persuade Combe to remain with him; but to this none of his arguments could induce his first mate to consent.

"I promised to serve King George for a year, and to assist in collecting his revenue for him," said Billy. "I have done so faithfully, as you know. I am now free to go where I will."

The following day the Scourge put into Portsmouth harbor. Billy took his traps, went on shore, claimed his discharge, received it and his

prize-money, and forthwith started for his native place, Hamble, a village on a stream of the same name, near the mouth of the Southampton Water.

He was cordially welcomed on his arrival by his old friends, particularly by the fairer portion of them, among whom he was a great favorite, but more especially by Mary Dawson, the prettiest girl in the village. What his kissing theory, and I may as well say practice, had to do with this predilection of the women, I do not know, but I only state the fact, so it was. Billy found himself in clover, for he had had much hard work in the cutter, constantly at sea, and seldom on shore, and he now the more felt inclined to enjoy himself to the utmost.

Mary sat by his side and filled his pipe when it was out, and replenished his glass when it was empty. He warbled forth his best songs with a joyous voice, and afterwards danced his best hornpipe with Mary, bounding about and shrieking with glee. He vowed that though it might be a very fine thing to be a king's officer, and wear a uniform, for his part he was heartily glad to be free of it, and would be at the old work as soon as he could. He wound up his exploits of the evening by vowing to Mary, that after he had made a few successful trips, he would come back and marry her if she would have him, which, with many a blush, she promised to, and the compact was sealed with the like number of kisses.

Some days after the evening when Billy made his vows to Mary Dawson, a large cutter might have been seen steering through the Needles passage between the Isle of Wight and the main, with a fresh breeze from the north-east. She was a remarkably fine vessel, of great beam and power, and carried four long guns of heavy metal upon her decks, so that whatever work her crew might have in hand, they would be able to fight about it, if any one attempted to impede them. She might have measured eighty tons, or rather more, perhaps, I am not sure, but certainly not less, and carried an enormous spread of canvass, new and white as the driven snow. Some twenty stout fellows walked her decks, with a strong spice of reckless daring in their countenances, and a costume which had no pretensions to uniformity, though affecting a considerable degree of nautical dandyism. Though the craft was built for speed and fitted for fighting, she certainly did not look like a king's ship, nor were her crew like man-o'-war's-men. What she was her deeds will hereafter show.

On one side lay the coast of Hampshire, with its richly cultivated fields, its ancient forest renowned in history, and its numerous country mansions; on the other the lofty cliffs and sunny downs of the beautiful Isle of Wight. The long, outstretching beach of Hurst, with its sturdy round castle, was on her weather-quarter, and broad on her beam lay the Shingles, their small, yellow head just showing above water, and the wide expanse of foaming, broken waves, which surrounded them, warned the mariner against a too near approach. On her weather or starboard bow might be seen in the distance the high, sandy cliffs of Hardle, and almost ahead the more elevated headland of Christchurch, with its town and the spire of its cathedral a little way inland. The cutter clove her way rapidly through the water. The dancing waves sparkled brightly in the rays of the rising sun, which threw a ruddy glow over the topmost pinnacles of the Needle rocks then close on her lee-bow. In those days they consisted of three lofty chalk rocks, two of them joined together at their summits, but time which spares so little, has spared not them, and the fragment which connected them has long since been precipitated into the depths below, though they still proudly rear their heads, towering above the fierce billows which rage during the storms of winter at their base. The cutter had just passed them, and had opened Scratchel's Bay to the south-west of them, when she might be said to be fairly in the British Channel.

"Now I feel myself once more a man," exclaimed, in a joyous tone, a fine, active-looking fellow, who had been for some time walking the deck in silence, now gazing aloft with a satisfied eye at the trim of the sails, now casting a glance over the side, or watching the passing cliffs to see how fast the cutter slipped through the water. "Is n't she a darling, Jim?" he continued, turning to the man who stood near him; "what a clean run she has, and her bows—don't they just cut like a knife! Look at her canvass—what a spread of it she has—why, there 's enough there to carry you to heaven, Jim. I should like to have a spanking breeze to try her, and then if she just don't go along to astonish, then my name is n't Billy Combe."

The speaker was in truth the famed Billy Combe and no other; now master and part owner of the Rapid cutter, just launched, and as fast a craft as ever sailed from Hamble Creek. I have not yet described Billy. His good looks did not consist so much in his height or size, as in his active figure, his florid complexion, his clear, open blue eye, his light, curling locks, and his well-formed mouth and white teeth. Jim Dore was his first mate, and, if unlike him in some respects, he resembled him strongly in his attachment to smuggling.

"Keep her up a little bit, Tom," said the captain, turning to the man at the helm. "Here, my boys, take a pull at the main-sheet, and she 'll lay well into Christchurch Bay; an inch or two of the jib-sheet now—there, that will do."

The cutter, hauled closer on a wind, heeled slightly over, and darted like an arrow with her head towards the shore.

"I 'll tell ye what I 'll do, Jim," observed the captain, as he walked the deck with his mate, every step showing the elasticity of his spirits; "we 'll just heave the cutter too while I go on shore for an hour or so, see Tom Doxton and the other sportsmen, arrange about collecting the people, and settle the time for running the crop, look in at the Haven House, get a swig of Betsy Seller's ale, and then away for Cherbourg—eh, Jim? I should like to see the pretty craft with a full cargo in her; why she 'll be as stiff as a house. Bless her, she is a beauty."

And with an eye of pride Billy surveyed over and over again every portion of his newly purchased vessel—partly purchased, by-the-by, with the prize-money he had gained while doing duty in the revenue service.

The town of Christchurch is situated on a shallow arm of the sea, or lagoon, about three miles from the coast, and at the entrance of this lagoon, on the west side, is a sandy spot on which still stands a public house called the Haven House, then kept by a buxom widow, a Mrs. Sellers, and the resort of seafaring men, boatmen, and fishermen, but more especially of smugglers. To the east, along the coast, Hardle Cliff extends towards Lymington, with the small villages of Ashe and Barton on its summit, and to the west and south rises the high rugged

promontory called Christchurch Head, while the coast, then trending to the south, is indented with the bay of Poole, Studland, and Swanwich. In less than an hour the Rapid lay with her foresheet to windward, hove-in in Christchurch Bay, while Combe went on shore. After calling at several cottages, and speaking to several people, Billy took his way to the Haven House, a dark red brick building, with narrow gable-ends, and outhouses of lower proportions behind it. On one side was the bar-room and kitchen, all in one; on the other, a little parlor, with sanded floor, for the accommodation of those who wished for privacy. Billy Combe entered the bar-room with the independent air of a man who knows that he is welcome, and the first person he encountered was the landlady, the buxom widow Sellers. She uttered a faint scream of surprise as she beheld him, and a ruddy hue overspread her well-filled neck and cheeks.

"Ah, Mr. Combe, is that you, indeed!" she exclaimed. "I thought you had forgotten me now you have turned king's officer."

"Forgotten you, Betsy! not I, forsooth. Give us a buss, girl, for old friendship's sake."

A loud smack sounded through the room.

"Well, widow," continued Billy, seating himself on a bench at no great distance, it must be owned, from the landlady, "I 'm no longer a king's officer, but am about the old work again, and by-the-by, Betsy, what do you think? I 'm going to be spliced at last—hard and fast."

"Spliced!" ejaculated the widow, gasping for breath, "to whom?"

"Ah, that I shan't say, just to tease you," answered Billy, laughing; "a pretty girl, you may be sure."

"A mere girl! is she better than a ——? Has all you said come to this—after what you have done—oh Billy, Billy, how could you?" and the widow burst into tears.

Billy Combe was astonished, confounded. What had he done to make the widow weep? He did all he could to dry her tears and to soothe her spirits, but in vain. She ended by being in a violent rage with him, and might have proceeded to extremities had not the arrival of some other persons put an end to this interview. With one of the strangers Billy retired into the parlor, to hold a conference of some importance, while the widow dried her tears, and put on a smiling countenance to receive her guests, but she nevertheless treasured up her feelings in her heart, and vowed deadly vengeance against the betrayer of her happiness.

The rollicking captain of the Rapid, having finally concluded all his arrangements in the private parlor of the Haven House, swallowed a tankard of the hostess' best ale, and given her a parting salute, which she took with a bad grace, hurried down to his boat, and was quickly on board. The cutter's sails were immediately filled on the larboard tack, and with a flowing sheet she ran across the channel towards Cherbourg.

"Billy Combe, Billy Combe, you had better not have meddled with the widow," observed Jim Dore, with a laughing countenance, when his captain told him the story of the landlady's love. "Them widows is ticklish creatures, depend on it."

I have not time to describe how Billy Combe met a number of friends at Cherbourg, how he purchased a valuable cargo of brandy and silks, and how without loss of time he got under weigh for the English coast. Scarcely had the Rapid put to sea than it came to blow very hard from the north-east, with frequent squalls of rain and hail, so Billy had as good an opportunity as his heart could desire of trying the weatherly qualities of his new craft.

"She behaves like a duck, that she does, the beauty," he exclaimed, wiping the salt spray from his eyes with the back of his rough hand. "Would n't she go along just, if we had to run for it from a king's cruiser? I would n't give her up as long as I 'd a stick standing on her keel to run on, that I know."

As night approached the wind increased, blowing dead on end from the Needles, but Combe still cracked on sail in the cutter; for he was not the man to miss being up to his time, and not having expected a foul wind he had spent a longer period at Cherbourg than he ought to have done. During the first part of the night they had an increasing moon, which, as the rapidly passing clouds ever and anon left it unobscured, afforded them just sufficient light to see the huge waves which came tumbling towards them, and enabled them to luff up in time to avoid their breaking on board, as also to steer clear of any vessel which might be standing across their course. When, however, towards the morning, the moon sank beneath the horizon, and the clouds thickened in the sky, the darkness became so intense that they could scarcely see their noses on each other's faces, much more a fathom beyond the bowsprit. The captain now thought it better to shorten sail; so they got the storm jib on her, and set the tri-sail, when away she went as merrily again as before.

"If this weather holds all to-morrow night, we are in high luck," observed Billy; "for the revenue cruisers will never think of coming out to look for us, and we shall have plenty of time to run all our cargo comfortably, except the red coats on the shore take it into their heads to trouble us; but if Doxton manages properly they will be off at Keyhaven, while we are getting the things on shore."

While he was speaking a sudden squall, stronger than before had blown, laid the vessel completely on her beam ends. Combe ran to the helm, for the man who was steering was thrown with violence on the deck, and seizing the tiller put up the helm.

"Lower away the tri-sail—up with the jib," he sung out. Before any damage was done the vessel righted, and ran off before the wind.

The jib was then hauled down, and the tri-sail being again set, a lull was watched for, and the cutter brought gradually up with her head to the wind, and her fore-sheet to windward. There she lay, bobbing away like a duck upon the waves, but without taking a drop of water over her decks. Thus passed the night, during which the captain, who was naturally rather anxious, was, like a good seaman, constantly on deck.

The morning was approaching, but the thick, misty atmosphere retarded the appearance of day, when, just as he began to see rather more than an inch or so beyond his nose, as he was casting a glance of his weather eye to windward, he fancied he discerned through the darkness a towering mass bearing down towards him. At that moment, the clouds breaking way in the east, a gleam of pale light was shed over the face of the deep. He looked again; the dark mass he had seen was the hull and sails of a ship running down channel.

"A sail close on the weather bow," cried the look-out forward.

"Hard up with the helm," sung out Billy; "let down the fore-sheet—keep her away, or the ship will be into us."

The cutter's sails were filled, and away she darted through the foaming waves, her main-boom almost grazing the sides of a sloop of war, which came rolling down past her before the gale.

"What cutter is that?" cried a voice through a speaking-trumpet from the deck of the ship.

"The Bow-wow-wow," responded Billy.

"What do you say?" cried the same voice.

"The ha! ha! ha!" replied Billy, and the ship was out of hearing. "I knows her," he observed, with a nod of the head, "she 's the Orestes brig, and a fast craft she is, with a man who knows how to handle her as skipper. We must not show that we have reason to shun her though."

Billy kept his eye upon her movements. His answers did not appear to have been satisfactory, for presently she was seen to bring her broad-side to the wind, the after yards were braced sharp upon the larboard tack, the head yards followed, and she stood away on a bowline, ready to tack back towards the cutter.

"Is that your dodge, my lad?" said Billy, on the first indications of what she was about. "Lower away the tri-sail, my boys; set the mainsail; two reefs in it will do; out with the second jib. Bear a hand, my hearties; that ship is sent to look after us; so we 've no time to lose. We should n't find her company pleasant, I can tell you."

The men scarcely needed any advice to stimulate them to exertion, for they one and all at once comprehended the dangerous position in which they were placed. The cutter's best point of sailing was close hauled on a wind, and this Combe well knew was the Orestes' worst, though, going free or before the wind, she was a remarkably fast ship. His aim, therefore, since she had fortunately run past him, was to keep to windward of her, and as from her square rig she took a long time going about, to induce her to make as many tacks as possible; thus to gain another advantage of her. The Orestes was now standing a little to the southward of east, close hauled on the larboard tack, while the Rapid was lying well up to the northward, on the other tack. As soon as the king's ship had hauled to the wind she let fly one of her after guns as a signal for Billy to heave-to.

"Talk away, old girl," said Billy, laughing; "you may shout loud enough before I heed you."

Seeing that the cutter held on her course regardless of his signal, the Orestes fired shot after shot, the balls flying wide of their mark; for with the heavy sea running there was much difficulty in taking aim, and naval gunnery was not in those days brought to the perfection it is at present. Combe was aware that the captain of the Orestes well knew that the Rapid would not attempt to run before the wind, as his square-rigged ship would then have the decided advantage of her, and that he therefore hoped to capture her by jamming her in with the land, if he could not succeed in winging her with his shot. The Rapid consequently steadily kept on her course to the northward, quickly increasing her distance from the king's ship.

"She will be about soon, or she will be afraid of missing us," observed Combe, "and then, my lads, it 's our turn. Ready about when you see her tack."

Scarcely had he spoken when the Orestes came slowly up to the wind—her main yards were braced round, the head sails followed, and away she dashed after her tiny chase.

"Now, my lads, look out for a lull," cried the captain of the Rapid. "Let fly the jib-sheet, down with the helm, Jim. That 's it beautifully. Let draw the foresail. Oh, she's a darling."

And the cutter, coming round in a third of the time the ship had taken, bounded away over the foaming waves with her head to the eastward, the sea breaking over her bows, and deluging her decks fore and aft; but her hatches were securely battened down, and not a drop got below. The people in the Orestes, enraged at the obstinacy and daring of the cutter's crew, redoubled their efforts to hit her, some of their shot passing very close, but none had yet come on board. At last one passed right through her mainsail.

"If it comes to that," exclaimed Combe, with an expression of anger his countenance never wore, "I 'll show you that two can play at that game." On this he beckoned his crew aft. "Now, my lads, I 've just this to say to you," he began; "all I am worth in the world floats in this craft. It 's hanging work to fire into a king's ship, you know; but, for my part, I 'd sooner sink than be taken or lose my vessel; will you stand by me?"

"Never fear, Combe; we 'll stand by you to a man," cried Jim Dore and the rest of the crew. "We are ready to fight if you like it."

"Well, then, my fine lads, let 's train our lee guns aft, and try to knock some of the feathers out of yon fine bird."

No sooner proposed than done. The two starboard guns were loaded, and run out at the ports, and as the Orestes offered a better mark for their aim than they had done for hers, several of their shot took effect. Combe watched them with an anxious eye, for it was a hazardous game he was playing.

"I 'll just take a shot and see what I can do," he said; and watching till he brought his gun well on with her foremast, he fired. The sea at that moment lifted the stern of the cutter, and the shot flew higher than he intended, though not than he wished, for it knocked away the foretopmast stay-sail sheet close at the clew of the sail, which fluttering wildly in the gale was almost torn to shreds before it could be hauled down, while the ship, deprived of her head sail, flew up into the wind. "Ha! ha!" exclaimed Combe, clapping his hands with glee, "another shot like that, and we shall soon part company."

It was sometime before a new sail could be bent, and the delay enabled the Rapid to work considerably ahead of her pursuer, but her position was still very critical. A shot might carry away her mast or spars, the wind might shift and throw her into the jaws of the enemy, or it might drop altogether, and then the boats would capture her to a certainty. The smugglers, however, had now made their choice, and fighting was now to be the order of the day. In those good old times they never thought of throwing the cargo overboard, or abandoning it to the enemy, as was done in *late degenerate days;* and, in the present instance, had they wished it, they could not have done so without being seen. In consequence of the damage she had received, the Orestes was obliged to keep a little off the wind, to run no risk of getting into it, and being compelled to box off again, by which she would have lost still more way; but as the cutter crossed her on the opposite tack, she revenged herself by letting fly her whole broadside at her. The shot fell thick round the Rapid. One ball was more fatally directed than the rest. It struck one of the smuggler's crew, carrying away his arm,

and dreadfully lacerating his breast. A cry of agony escaped him as he fell bleeding on the deck. His comrades attempted to raise him and carry him below, but he entreated to be left on deck.

"It 's all up with me," he ejaculated, faintly; "but I'd like to see what happens. Here, Joe, just pass a handkerchief round my shoulder, and then let me be; there 's no use doing more."

The smugglers brought up a mattrass from below and placed their dying shipmate on it against the companion hatch, so that he could have a view of the enemy as he desired. No one else was hurt, and the shot, passing through the weather bulwarks, did no further damage.

As soon as the Orestes had hoisted a new foretopmast staysail, she tacked; on which the cutter did the same, compelling the former soon afterwards to follow her example. This, however, was not the tack on which Combe wished to be; but he knew that the oftener he went about, the oftener the brig of war would be obliged to do the same, as by standing on long on opposite tacks they would soon lose sight of each other, which, with the thick weather there was, would be quickly done. Thus they continued ploughing their way through the deep green, froth-combed waves, tack and tack, for some time, the smaller vessel evidently distancing her pursuer.

"We 've got out of range of her guns, captain, at all events," said Jim Dore. "That was an unlucky shot for poor Jack Martin.—Well, Jack, how do you get on, my man!"

But the wounded seaman returned no answer. He went up to him; his eyes were glazed and staring. He knelt down by his side and took his hand; it was cold and clammy, and fell powerless on the deck. The poor fellow was dead. His last gaze had been one of defiance on those his lawless following had made his foes. His shipmates, laying his body at the foot of the mast, covered it up with a sail till they had time to give it a sailor's simple burial. The sun was now high up in the heavens, though vainly attempting to break through the thick masses of dark clouds which floated rapidly past it; heavy showers of hail and rain every now and then continued falling, while the spray like a sheet covered the foaming waves.

The cutter, like a sea-bird, stemmed buoyantly over it, dipping her bows now and then, as it were in sport, into the white-crested billows, and heeling over till her lee bulwarks were almost under water; while the heavier ship seemed, compared to her, to be laboring onwards through the stormy sea with pain and difficulty. Hour after hour passed thus away, and the day was drawing to a close, but still the king's cruiser continued the chase. At last, as the thick mist cleared away to windward for an instant the high chalk cliffs of the west end of the Isle of Wight appeared in sight.

"Huzza! my boys," exclaimed the captain, as the view welcomed his eyes, "let us once get well in with the land, and then good-by to the Orestes. We shall get the young flood making up close in shore round the island, with smooth water, while she still has a tumbling sea, and an hour more of the ebb."

The cutter now made a long reach, standing on till she was close under the cliffs of a beautiful part of the coast, some way to the eastward of Freshwater Bay, where she was in comparatively smooth water. She held her course till she looked as if she were about to rush upon the sandy beach, when her helm was put down, and away she went upon the other tack.

"There 's less wind in here," observed Combe, whose complacency had considerably returned; "let 's shake another reef out of the mainsail, and see if we can't jog her on a little faster. We must be off Christchurch to-night, somehow. Luff her up a bit, Joe; see how she shoots a-head; so—steady—that will do."

The smugglers, who had for some time past been standing with their hands in their pea-coat pockets, without employment, were now all upon the alert. The reef was shaken out and the sail hoisted up in a moment. It was now tack and tack every instant, the cutter standing on till she seemed almost upon the rocks; but Combe knew every inch of the coast, and took advantage of every little bay and each channel to make good his way out of the strength of the ebb. Often it appeared impossible that the cutter could escape from the dark rocks above water, and the hidden rocks covered with foaming breakers with which she was surrounded, but with wonderful sagacity Combe steered the cutter amid the dangers, and was soon again in the open sea. By the time the rays of the setting sun, which for an instant burst forth from amid the dark clouds, cast a ruddy glow upon the white summits of the Culver cliffs at the east end of the island, the sloop of war, as seen from the cutter's decks, was hull down to leeward. Again the opaque clouds closed in, the thick mist came down over the land and sea, and darkness rapidly approached. Less and less distinct appeared the lofty sails of the king's cruiser, till at last the sharpest eye on board could no longer discern them.

"Huzza! my lads, we 've shown a clean pair of heels this time, and now we must see about getting the things on shore. I promised to be off Christchurch Head by twelve to-night. It 's a long way from this, but it must be done. We 'll see if the Rapid can't go as fast through the water before the wind as she has done close hauled. What say you, Jim, shall we run through the Needles, or round by the back of the Wight again!"

"I should say through the Needles," answered the mate. "We shall have smooth water and the best part of the ebb, and there 's no cruiser will ever think of looking out for us in this weather."

The cutter was accordingly kept close hauled, and after numerous tacks she weathered St. Helen's, and easing off her mainsheet stood away with a flowing sail through the passage between the island and Spithead. Dark as it was, the smugglers' keen eyes, sharpened by long practice, could sufficiently discern the shores on either side of the Solent to enable them to hold their course down the centre of the channel. Having made Cowes Point, the remaining reefs were shaken out of the mainsail, the squaresail was set, and keeping before the wind the Rapid was steering directly for the Needles passage, where I first introduced her to my readers.

How changed now was the scene from what it was on that morning. Then it was a view of calm beauty and sunshine; now all was darkness and tempest. The wind whistled loudly, the waves foamed and fretted, the lightning flashed; but the smugglers' hearts were undaunted. The lights on Hurst beach enabled them to steer clear through the dangerous passage, their ears deafened with the loud roar of the surges as they dashed furiously against the Needle-rocks, but they threaded their

way in safety, and were once more in the open sea. It wanted still an hour to midnight. Taking in her squaresail and two reefs in the mainsail, for it was still blowing almost as hard as ever, the cutter hauled up a little for Christchurch Bay. At last the dark outline of Christchurch Head appeared on the larboard bow, the cutter was rounded to, and a lantern hoisted three times to the mast-head. To those not watching for it, it might have appeared like some meteor or a deception of the sight. The signal was answered from the shore, to the no small satisfaction of the smugglers. The goods were now quickly got upon deck ready for landing. A quarter of an hour had passed when several boats were seen pulling towards them. A light was shown from the headmost one, and a pistol flashed directly after it.

"Boat ahoy!" hailed the captain of the Rapid, "who are you looking for?"

"A friend, a pipe, and a glass of grog," answered a voice from the boat.

"All 's right, come on board," responded Combe.

On this the boats pulled alongside, when a few words served to explain the occurrences of the day, though little time was expended in conversation.

The crew of the cutter now set to work to load the boats, which, however, being of small size, for the sake of running into shallow water, could venture, with the heavy sea there was running, only to carry a small portion of the goods at a time. They had already made several trips, when, from information Combe received from the shore, he determined to land himself in order to superintend the transportation of the goods further inland. Leaving, therefore, the cutter in charge of Jim Dore, with directions, should an enemy appear, to stand out to sea and try the swiftness of his heels, he leaped into one of the laden boats and steered for the beach. The wind had by this time considerably abated, the rain ceased, the clouds cleared away, and the moon shed a bright light upon the waters. This was what those engaged in their lawless occupation would particularly have avoided. The darker the night and the worse the weather the better they were pleased. Combe, however, ascertained, much to his satisfaction, that the dragoons stationed in the neighborhood had gone off towards Milford; so there was little chance of interruption from them, and for other enemies he cared little.

The spot where the run was made was a narrow, shingle beach, at the foot of a long range of high cliffs I have already described as extending between Christchurch and Lymington. As Combe stepped on shore, he found a number of people collected; some were employed in unloading the boats, while others were carrying the things up the cliffs, where carts were ready to convey them to the depôts far inland. The greater portion was still piled up upon the beach, above high-water mark, for so steep and difficult was the path up the cliff that one man could convey only a single tub or a small case of silks at a time. They appeared like ants as they wound their way in a long line along the narrow path up the cliff, where, having deposited their loads, they returned by an almost perpendicular descent to the beach.

There might have been sixty persons, or more, engaged in the work, besides the crew of the Rapid, every one of them armed to the teeth with pistols, blunderbusses, and swords, or pikes. Some were in the dress of countrymen, with smock-frocks or velveteen jackets, others were evidently seamen, and some few, who appeared to be directing the rest, were, by the tones of their voices, belonging to a higher station in society. The presence of Combe among them reanimated them all to greater exertions, for already a valuable portion of the night had been spent, and much remained to be done. At last it was found impossible to convey all the goods away into the interior of the country before daybreak, when, Combe consulting with the man called Doxton and others of his chief assistants, it was determined to stow them away in the vault often used for that purpose, beneath some ruins situated on the side of a ravine which ran up from the shore a short distance to the eastward. The party accordingly divided, Doxton with one gang of armed men mounted the cliffs to escort the carts to a place of safety, while Combe remained to superintend the removal of the remainder of the goods into the vault. The ruin had in the olden days of Rome's supremacy been a chapel dedicated to the Holy Virgin, the protector of mariners, and has long since totally disappeared, although the vault probably still remains covered up by rubbish and overgrown by the green herbage. Combe had about ten of his own crew with him and twenty landsmen; so that in a couple of trips the whole of the goods on shore were conveyed out of sight, and, as he judged, the hold of the Rapid was almost cleared, when, as he was standing in front of the ruins, telling off the people as they came in, he was startled by several flashes to seaward and the report of fire-arms. He rushed to the edge of the cliff, whence, through his night-glass, he could better observe what was going forward. The moon, sinking low towards the horizon, cast her light upon the white sails of a tall ship in the offing, while the Rapid, with every stitch of canvass she could carry, was standing away to the westward, returning the fire, from what he judged from the flashes of the guns to be one or more boats chasing her, though the darkness prevented their movements being clearly seen.

Combe watched the scene with intense interest, his hands almost crushing the spy-glass he held in his grasp.

"I would give a thousand pounds to be on board now," he exclaimed to himself; "but Dore is a man, and will fight the vessel to the last. If he can get round St. Alban's Head by the time the moon goes down, it 's hard if he don't manage to weather on the revenue cruiser, whoever she may be, in the dark, and be off to the coast of France. Bravo, Jim! fire away, my lad. Ah, the Rapid shows her heels, and the boats may catch her if they can. Now she has only got the big one to deal with, and with this leading wind, if she keeps well in shore, where the other can't follow, she 's safe."

While he was speaking, the flashes from the guns appeared to be growing further and further apart, and it was evident that the revenue boats had been discovered by the cutter before they were alongside, in time for them to fill her sails and stand away from them; and Combe judged rightly that Dore had fired at them merely to draw them on and attract their attention from the shore.

Combe was soon joined by some of the smugglers, who had likewise been startled by the firing, while others came hurrying up from the beach with the same intelligence. A large band were thus soon collected, endeavoring to discern through the darkness the manœuvres of the vessels, making their observations with violent oaths and exclamations,

and vowing vengeance against those who dared to interfere with their proceedings. While thus occupied, they were suddenly aroused by loud shouts, cries, and execrations, the report of pistols, and the tramping of feet. Combe, followed by the rest of the men, rushed down the cliff, where they were met by several of their people, laden with goods, and pursued by a strong party of seamen, led on by an officer in naval uniform. The two parties met at the entrance of the ravine, and so impetuous was the charge of the king's seamen, that the smugglers were driven back several paces before they were able to make a stand; pistol-shots were rapidly exchanged, their flashes lighting up the scene—the clash of cutlasses mingling with the shouts and fierce execrations of the combatants. Combe, rallying his people, who were soon joined by the remainder of their friends, again led them on, when he encountered the royal officer at the head of his men.

"Yield, you rascal, yield," cried the officer, aiming a blow with his cutlass at Combe's head; "some of you fellows have given us trouble enough to-night, and you shall pay for it."

"I never give in while I can fight," returned the smuggler, as he parried the blow and drew a pistol from his belt.

His anger was up, for he guessed by these words that it was one of the officers of the Orestes opposed to him. He fired—the officer, with a groan, staggered and fell, and the smugglers, at the same time making a desperate rush, drove back the seamen, disheartened by the loss of their leader, to the beach. Another officer in vain endeavored to urge them on; the smugglers, grown desperate, were too many for them. The king's seamen fought well and kept their enemies at bay, but at last were driven back and compelled to save their lives in the boats. This was all Combe required to enable his friends to carry off the remainder of the goods; and as soon as this was accomplished he sounded a retreat, on which the smugglers instantly dispersed with such rapidity up the cliffs that by the time the man-of-war's men again landed not one of them was to be seen.

The next morning the dead body of the officer, who proved to be the master of the Orestes, was found; but none of the crew could swear to the person who fired the shot which killed him, nor were any hopes entertained by the authorities of discovering the guilty man. The commander of the Orestes, it appeared, had from the first received information of the run intended to be made near Christchurch, and was on the look-out for the smuggler when the gale I have described came on. When, on losing sight of her at the east end of the island, after beating some hours more to windward in the vain hope of falling in with her, he put the ship about and stood back for Christchurch Bay. He arrived, as we have seen, just in time to be too late. The master, with two boats, was accordingly despatched to surprise the cutter, but Jim Dore was too wide awake to be taken at advantage. The result of the attempt has already been shown.

We must now change the scene to the private parlor of the Haven House, on the evening after the run. Before a table, on which stood sundry bottles, jugs, glasses, and meerschaums, with tobacco-boxes and other apparatus for smoking, sat three men, with one of whom the reader is well acquainted, being no other, than the redoubtable Billy Combe; another was a man of whom I have spoken, Doxton by name; and the third was a person of greater pretensions, though of his respectability others may think differently, as he was a partner of the London house on whose account the silks and laces had been bought. Business had been got over and their glasses replenished.

"This is a bad affair, the death of the master of the Orestes," observed the respectable merchant; "it will make the officers of revenue more on the alert."

"It could n't be helped," answered Combe, in a careless tone. "If I had not shot him he would have shot me or some better man."

"What, it was you who shot him!" said the merchant; "I thought you had more discretion."

"I did shoot him, and I scorn to deny it," answered Combe, boldly; "I was defending my right, and would do the same again to any one who interfered with me."

"But you may get yourself into trouble if you run such risks, and then who shall we employ to bring over our silks!" argued the merchant.

"My advice, Combe, to you, is, that you should get quietly over to the coast of France, till all inquiries about the death of the officer are at rest," observed Doxton; "it will be known to a certainty that you were the leader of the party, and you will be made answerable."

"Do, my good friend, do take care of yourself; we cannot afford to lose you," added the merchant.

While this discussion was going forward, Mrs. Sellers knocked at the door, and being told to enter, placed in Billy's hand a note, which ran thus:

"Dear Captain,

"I write this, which a French lugger will carry over to you, from Cherbourg. We had a sharp run, but doubled on the big one, and stole away to windward of her, while she thought she had run us on shore dead to leeward. We want you over here, and no one more so than

"Yours, Jim Dore."

"Huzza!" exclaimed Combe; "the cutter's safe, and now I care for nothing. I say, Betsy, just bring in some paper and ink, not forgetting a pen. I want to write a letter home, just to tell them I shall not be back for some time, and then I 'm off for France."

He accordingly set to work, and wrote several letters, rather laconic they certainly were, which he committed to the care of Mrs. Sellers. On the superscription of one of them was Mary Dawson's name. When the widow saw it, her eye kindled and her lips curled with anger, and poor Mary never received his letter.

When Combe received his note, the lugger was employed in running her cargo, and by daybreak she was again to sail. Combe had made his arrangements, and was walking down to the beach, where a boat was waiting to convey him on board the Frenchman, when he found himself on a sudden surrounded by a number of armed men, and before he had time to make any resistance, his hands were bound behind him, he was lifted on horseback, and carried off far inland, escorted by a party of dragoons.

Combe was a bold fellow, and could look at things on their black side without trembling, but he at once saw the critical position in which he was placed. For two days the party travelled on, stopping only a sufficient time to rest their horses; when at length they reached London, and the smuggler found himself the inmate of a prison, without a soul to speak

to or advise with. He had been a prisoner for some days, and even his buoyant spirits were at a low ebb, when, as he was seated in his cell, resting his head upon his hands, and giving way to melancholy reflections, the door opened, and a person entered. He looked up, and beheld, by the dim light of the lamp, the girl he loved, his own Mary Dawson. Springing on his feet, he clasped her in his arms. She sobbed on his bosom; and even his stout heart was moved almost to tears. She told him that it was reported that affairs would go hard with him on his trial, but that Jim Dore had come over from France, and had collected plenty of money to employ the best counsel for his defence. Combe, in return, endeavored to cheer her spirits, and to assure her that all would go well.

"But you did not murder the officer!" said Mary; "surely you could not kill anybody!"

"Murder! no," answered Combe, proudly; "cowards only murder. But don't ask me, Mary—what is done, I cannot now undo. Thank you, my own Mary, for all you have done for me; and tell Dore, if he can get leave to see me, to come without delay."

The gaoler now came in to tell Mary she must quit her lover.

The next day Dore arrived with a lawyer, and Combe's defence was drawn out with considerable ability, though, as the accuser was unknown, there was some difficulty in doing so. At last the trial came on: Combe was placed in the dock, and in the witness-box appeared a female—she turned her head towards the prisoner, and he beheld the vindictive features of widow Sellers. Several of Combe's friends had come up to London to attend the trial. The business of the day commenced; the witnesses were examined. Mrs. Sellers swore that she had heard him acknowledge that he had killed the master of the Orestes; Doxton was brought forward, and compelled to confirm the statement; and then two of the seamen of the Orestes swore that they saw him fire the fatal shot; one of the smugglers being brought forward to prove that he was one of those engaged, and at the head of the party. Against this mass of evidence it was impossible to contend successfully. The jury returned a verdict of guilty, and the judge, putting on the black cap, pronounced his sentence. He was condemned to be hung, as a pirate, in chains, on the banks of the Thames. Combe heard his doom, like a brave man, without trembling, though he afterwards entreated that Mary might be conveyed home without being told of his condemnation, observing,

"It would break my heart to see her in tears, poor girl, and could do her no good. But, Jim, if you could manage it, though I was not given much to church-going, I should like to rest quietly in our own churchyard, and then mayhap she would come sometimes and watch over me."

Dore, as he wrung his comrade's hand, promised to obey his wishes.

In those days, the banks of the Thames, near Blackwall, were adorned with a row of lofty gibbets, on which hung the ghastly remains of several pirates and murderers on the high seas, as a warning to all the passers-by to avoid a similar destiny.

I am not fond of describing horrors, and shall therefore not detail the execution of my hero. The sun went down and rose again, and men and boys were hawking about the streets of London, "A full and particular Account of the Life and Adventures, and the last dying Speech and Execution of the bold Smuggler, William Combe, who murdered the master of his majesty's sloop Orestes."

That night was one of storm and rain, and the bodies of the malefactors swayed to and fro in the gale, while the creaking of the gibbets and the clanking of the chains added their mournful music to the howling of the wind. Just after nightfall, while the tempest was at its height, two men approached the gibbet whereon hung the body of the smuggler, and, climbing to the top, set to work with files and chisels to free it from its chains. So well did they ply their instruments, that in a short time their work was accomplished, when, lowering the body to the ground, they bore it to a light cart waiting at hand. As soon as it was stowed within and carefully covered up, they drove off at a rapid rate towards the south. Several times they changed horses, which were standing out in readiness for them, and long before the morning dawned they stopped at the entrance of Hamble churchyard.

The curate of Hamble was a worthy, good man, of even temper and peaceable disposition, seeking to live in charity with all men, though rather afraid of his lawless and unruly parishioners. He had not long retired to rest, when he was aroused by a loud knocking at the door of the parsonage, and a voice summoning him to dress and come down with his prayerbook in hand. Half asleep, he did as he was desired, supposing some dying person required the consolation of religion; but no sooner did he open his door, than he found himself surrounded by several men, who gently led him forward.

"No harm is intended, sir," said one in a respectful tone, "but we have no time to lose. All we wish you to do is to perform the funeral service over the body of a parishioner, and to ask no questions."

The good curate felt that he had no resource but to consent, and soon entering the churchyard, he found himself standing at the head of a newly opened grave, at the other end of which he saw the old sexton, with the implements of his calling, while around stood a number of persons, chiefly in the rough dresses of seamen, a lantern here and there, held by some of them, throwing a pale, uncertain light over the ghastly scene. He had scarcely been there a minute, when wheels were heard rapidly approaching, and soon afterwards several men appeared, bearing in their arms a human body, wrapped up in a large sea-coat, which they placed carefully on the ground by the newly-made grave, exposing the features to view. The people crowded round it, when a young woman, who had been before standing aloof with two or three other females, rushed forward, and threw herself by the side of the corpse, exclaiming,

"Let me see him! let me see him!—they could not have been so barbarous as to murder him!"

But when the poor girl beheld the pallid and distorted features of her dead lover, uttering a loud shriek, she fell back and fainted in the arms of her friends. It is extraordinary with what care and forethought the smugglers had made arrangements for fulfilling their friend's dying request. A coffin was brought forward, into which the body was placed, and the lid being fastened down, the curate was requested to read the funeral service, which he did in a solemn, serious tone, in which a slight agitation might now and then have been perceptible. As the coffin was lowered into the grave, on the lid appeared, in brass letters, the name of "William Combe."

"There," exclaimed Jim Dore, with an unusual tremulousness in his voice, as the earth closed over the grave, "I 've done my duty to the poor fellow, and a braver man, or a better messmate, than he who sleeps under that sod, I never hope to break biscuit with again."

Soon afterwards, a simple grave-stone was erected, on which was inscribed the name of "William Combe; Died A. D. 178—, Aged 30;" and every day, while flowers bloomed, was it circled with a fresh wreath by the hand of love. Poor Mary remained faithful to her first affection, and even honest Jim Dore could not move her heart.

Mrs. Sellers was ever afterwards pointed at, as an example of the extremes to which a widow's vengeance might go when she is crossed in love. The smugglers deserted her inn, though it was still patronized by the revenue-men, but they only spent a quarter of what her former customers did, and she at length quitted the place, to avoid the sight of objects which recalled to her memory the lover she had so barbarously destroyed; though the Haven House remains to this day in much the same state as it then existed, and many a time is the tale told within its snug bar, by its sea-faring occupants, of how the bold smuggler, Billy Combe, was hung near Blackwall, on the Thames, for shooting the master of the Orestes, and buried, the same night, in Hamble churchyard, on the coast of Hampshire.

From the National Intelligencer.

THE BELL OF THE ATLANTIC.

It is a touching and remarkable fact that the bell of the Atlantic, supported by some portions of the wreck and the contiguous rock, still continues to toll, swept by heavy surges, the requiem of the dead.

Toll, toll, toll,
Thou Bell by billows swung,
And night and day thy warning words
Repeat with mournful tongue!
Toll for the queenly boat,
Wrecked on yon rocky shore,
Sea-weed is in her palace-halls,
She rides the surge no more!

Toll for the master bold,
The high-souled and the brave,
Who ruled her like a thing of life
Amid the crested wave!
Toll for the hardy crew,
Sons of the storm and blast,
Who long the tyrant ocean dared,
But it vanquished them at last!

Toll for the man of God,
Whose hallowed voice of prayer
Rose calm above the stifled groan
Of that intense despair!
How precious were those tones
On that sad verge of life,
Amid the fierce and freezing storm,
And the mountain-billows' strife!

Toll for the lover lost
To the summoned bridal train!
Bright glows a picture on his breast,
Beneath the unfathomed main—
One from her casement gazeth
Long o'er the misty sea;
He cometh not, pale maiden,
His heart is cold to thee!

Toll for the absent sire,
Who to his home drew near,
To bless a glad expecting group,
Fond wife, and children dear!
They heap the blazing hearth,
The festal board is spread,
But a fearful guest is at the gate:
Room for the sheeted dead!

Toll for the loved and fair,
The whelmed beneath the tide,
The broken harps around whose strings
The dull sea-monsters glide!
Mother and nursling sweet,
Reft from the household throng;
There 's bitter weeping in the nest
Where breathed their soul of song.

Toll for the hearts that bleed
'Neath misery's furrowing trace!
Toll for the hapless orphan left
The last of all his race!
Yea, with thy heaviest knell
From surge to rocky shore,
Toll for the living, not the dead,
Whose mortal woes are o'er!

Toll, toll, toll,
O'er breeze and billow free,
And with thy startling lore instruct
Each rover of the sea;
Tell how o'er proudest joys
May swift destruction sweep,
And bid him build his hopes on high,
Lone teacher of the deep! L. H. S.

SIR WALTER SCOTT'S TOMBSTONE.

We find the following interesting particulars, regarding the monument to be placed over Sir Walter Scott's grave at Dryburgh Abbey, in the *Inverness Courier*:—

"The Aberdeen papers state that a monumental stone for the grave of Sir Walter Scott has been constructed there:—

'At the works of Messrs. Macdonald and Leslie of Aberdeen, there has just been executed a massive tombstone, which is to be placed on the contiguous graves of the late Sir Walter Scott, and of Lady Scott, at Dryburgh Abbey. It consists of a large block of the beautiful red granite, cut from Messrs. Macdonald and Leslie's quarries at Stirling Hill, near Peterhead, on the property of the Earl of Aberdeen. The block is seven feet long, by six and a half feet broad, and weighs nearly five tons. The upper surface is cut in the form of the top of a double sarcophagus. On the one compartment is the following inscription:—

"Sir Walter Scott, Baronet,
Died September 21, A. D. 1832."

On the other:—

"Dame Charlotte Margaret Carpenter,
Wife of
Sir Walter Scott of Abbotsford, Baronet,
Died at Abbotsford, May 15, A. D. 1826."

'The letters are very deeply cut in the imperishable material of which the tombstone is composed, and will prove faithful to the record of departed

genius and worth with which they are charged, in defiance of the elemental action of many a future age.'

"We happen to know some of the incidents connected with this monument, which, as they relate to the 'mighty dead,' and explain the cause of the long delay in its erection, are worthy of recital. Many years since, the late Sir Francis Chantrey promised to furnish a design for the Dryburgh monument. His numerous engagements, however, and his declining health, interfered with this intention, and it seemed to be utterly forgotten. At length, on the suggestion of Mr. Lockhart, Mr. Cadell, the publisher, called on the eminent sculptor and reminded him of his offer. 'You shall have it,' said Chantrey; 'Dryburgh, you know, is a ruin, and the structure above Sir Walter's grave will come down some stormy morning. Now, my purpose is to put over the grave a huge granite block that will defy all such assaults, and baffle time itself.' He hastily sketched an outline of what he proposed; but the design went no further, and death soon carried off the artist. His friend and assistant, Mr. Allan Cunningham, was then applied to; he recollected the conversation, found Chantrey's rough sketch, and extended it in the form of a more regular drawing. He was next authorized to arrange with the Aberdeen granite workers, and on the very evening that he died—only a few hours before his decease—Allan wrote to Mr. Cadell closing the transaction. This was the last line traced by his busy hand, and, as such, his family asked and obtained possession of it. And thus, after the sudden deaths of two remarkable men, who sought to honor the memory of one still greater, the simple massive structure which they designed has been completed.

'Such burial the illustrious Hector found!'

Chantrey had a partiality for huge granite sepulchres, independently of the fitness of such an erection for the grave of Scott. He ordered that his own tomb at Norton, in Derbyshire, should be composed of wrought granite, covered by an enormous square of the same material; and that even this lasting memorial might be carefully preserved, he left by his will yearly sums to the vicar and schoolmaster of Norton, payable only 'so long as his tomb shall last,' and ten poor boys of the parish shall be instructed to remove the moss and nettles from around the edifice. This seems to argue a 'fond desire and longing after immortality;' yet it might be intended to ripen into useful fruit. Some among the successive generations of poor boys who pluck the nettles from the grave of the sculptor may be led to think of his high art and his fame, and to emulate his genius—for he, too, was once a poor boy. The busts of Chantrey are, however, his best monument—the living, intellectual marble will outlast the ponderous masses of dead granite."—*Sharpe's Magazine.*

A FELON.—The Newark Daily Advertiser publishes the following from a corrrespondent, dated

WASHINGTON, DEC. 30, 1846.

During a recent sojourn in Massachusetts I was made acquainted, through the kindness of one of the inspectors of the state prison at Charlestown, annually appointed by a law of that commonwealth, with the admirable arrangements of that state institution, the perfect discipline which controls it, and the industrial departments by which it is made to become a source of revenue, and thus lending its aid to the support of the state government. The annual returns made to the secretary of the commonwealth, as required by law, clearly establish this fact, and they may always be perused with interest. But my present purpose is less to call attention to the institution itself than to the situation and intellect of one of its inmates. Within its walls is confined, for some violation of the law, a convict who has attracted the attention of those whose province it is to watch over and guard the interests of the prison, and look to the security and well-being of those its occupants.

He is under sentence, I believe, for the crime of theft, and has now lived out the larger portion of the term for which he was to suffer incarceration within its dreary walls. Possessed of a somewhat amiable temper and disposition, and withal a no little philosophic turn of mind which easily reconciled him, in part, to his sad fate, he soon began to turn the talents with which he was endowed to a good account, by the exercise of his pen in prose and poetic productions.

Many of these, if not indicating a superior order of intellect, show him to be possessed of refinement of feeling, a generous philanthropy, and the inspiration of a natural, if not highly cultivated, poetic genius. They are inartistic, but exceedingly touching, considering the circumstances under which they were produced, coupled with the generous philanthropy and the exceeding sympathy for suffering humanity by which they are characterized. Of his prose writings I possessed myself of no copies, but was kindly furnished with several specimens of his talent at versification which do honor to his heart, and they are such as may well deserve more enduring record, and a wider fame, than is attained by the mere album record from which they were copied.

I now transmit, for publication in the daily, the following acrostic on the Massachusetts State Prison. It will be followed immediately by others of greater interest and superior merit—a merit arising from the remarkable elevation of moral and religious perception they evidence of one suffering in his captivity the just penalty for violated laws. M.

AN ACROSTIC.

Men! the despised ones of our fallen race,
Are cooped within these gloomy granite towers;—
Summers and winters pass with creeping pace;—
Seasons change not, and spring-time hath no flowers.
Autumn, once loved, so balmy and serene,
Comes cheerless now to these poor sorrowing eyes;—
Heaven's orbs course thro' their glittering paths unseen;—
Unseen are those bright gems that deck the skies.
Sleepless nights, and sad days, here go and come;
Evenings or mornings, bring no cheering ray;
There 's no sweet welcome to a happy home;
There 's nought to crown the labors of the day
Stranger, whoe'er or whatso'er thou art,
Sure thou with kindly words can'st fully show,
'T would bring warm feelings to the frozen heart,
And raise a hope where all is hopeless now.
These poor despised ones all have hearts like thee;
Each one can feel the cheering power of love;
Perchance thou might'st with heartfelt sympathy,
Raise their stray thoughts to better things above.
If they have fallen in temptation's snare,
Still they have kindred claims which God hath given,
Oh! lead them back with kindly words, and spare
No tones of love, but turn their hearts to heaven.

C. M.

From Chambers' Journal.

STORY OF AN EDINBURGH SEDAN-CARRIER.

At the corners of some of the principal streets of Edinburgh there may be seen little groups of message-carriers and sedan-carriers, rather rough-looking fellows in general, as might be expected from the exposure they undergo, but always decently dressed, and universally reputed to be steady and and trusty to a remarkable degree. For the most part these men are natives of the Highlands. The services which their forefathers paid to chieftains as gillies and as soldiers, they now are willing to render to the public at large for a regular scale of charges. Thus it happens, in many instances, that an industrious *writer*, of the blood of Maccalainmore or the Siol Tormid, carrying on business in Castle street or Queen street, will have his papers carried daily to the Parliament House by a scion of one who bore his ancestor's standard in battle three centuries ago; or that a young beauty, of the house of Maclaughlan or Mackenzie, is borne to the assembly rooms in a chair by the descendants of those whose proud charge it was to carry her forefathers through floods or quagmires in the days prior to General Wade. Now-a-days, chair-carrying is a much-reduced business, in consequence of the prevalence of hackney-chaises; only a few old ladies stick by them, much like Caxon's three customers in the Antiquary. Eighty years ago it was different. Edinburgh being then only an assemblage of alleys, and these huddled within narrow space, the chair was almost the sole vehicle for the convenience of evening visiting for both sexes. Still, however, the street-messengers and chairmen, taken together, form a conspicuous feature in the active life of the Edinburgh streets.

It is now a century since a member of this fraternity went through a series of extraordinary adventures, which have given his name a place in history. Ned Burke was a native of North Uist in the Hebrides, the son of a poor man, whose grandfather or great-grandfather had come from Ireland to settle in that island. Ned never learned to read or write, nor was he able to speak a word of English till he was upwards of thirty years of age. After passing several years in the service of various gentlemen, and thus acquiring some knowledge of the world, he became a chairman or sedan-carrier in Edinburgh. In the year 1745 he had again attached himself to a single master; he now served Mr. Alexander Macleod, advocate, a near relative of the chief of that name. This gentleman joined the army of Prince Charles, to whom he acted as aid-de-camp. Ned was thus led into what was called the Rebellion.

At the conclusion of the battle of Culloden, when the prince was obliged to leave the field, Ned Burke had the duty assigned to him of conducting his royal highness away, and guiding him through the country. For this he was well qualified, by the knowledge which he had acquired in the course of his services with various Highland gentlemen. He led the prince and his party westward for many miles, till, in the middle of the night, they arrived at Invergarry, a deserted mansion, where they were glad to rest without any suitable accommodations. Here, next day, Charles disguised himself in Ned's coat, that he might the better make his way to the west coast. They proceeded along the glens, and over vast mountains, till at length they reached one of the inlets of the Atlantic, on which they set sail in an open boat. A week from Culloden saw Charles lodged in a cow-house, in the desolate island of Benbecula, with only two or three friends, and poor Ned Burke as his sole attendant. They were buffeted about the Western Islands for some weeks, enduring all kinds of hardships and privations, and under the greatest danger for their lives. At this time Ned had only to go to some station of the enemy, seldom far off, and give information of his master's hiding-place, in order to secure the sum of thirty thousand pounds, which would have made him as great as the demigod his chief; but it does not appear that the faintest idea of such treachery ever entered the mind of this simple child of nature.

In the wretched outcast life which the party led, skulking in creeks of desert islands, exposed to the weather by night and day, often at a loss for the simplest necessaries of life, the prince, as is well known, never lost his good spirits. On the contrary, the cheerfulness with which he submitted to, and endeavored to make the best of everything, was the wonder of his companions, as well as a great support to them. Ned had the duty of arranging and preparing such victuals as they possessed. That is to say, he prepared them as far as any means of preparation existed in those miserable circumstances. Charles, however, finding Burke not over-neat in his ways of managing food, entered into the business himself, and then they became, as it were, joint cooks. A cake made by the prince with the brains of a cow, was afterwards spoken of by the individuals of the party as an unusually great treat. On another occasion, Ned, having dressed some fish, regretted there was no butter. "We 'll take the fish till the butter come," said the prince. Afterwards, remembering there was some butter among their stores, Ned went for it, but found it jammed amongst fragments of bread. He was about to give up the notion of using it, when Charles pointed out to him that the bread, being clean itself, could not make the butter dirty; and then he made sauce with it for the fish.

Burke afterwards related some curious particulars of what occurred when he was in the prince's company. Charles having killed a deer, Ned brought it home, and, making ready some collops, there comes a poor boy, who, without asking questions, put his hand among the meat, which the cook (Edward Burke) seeing, gave him a whip with the back of his hand. The prince, observing this, said, "Oh, man, you don't remember the Scripture, which commands to feed the hungry and clothe the naked. You ought rather to give him meat than a stripe." The prince then ordered some rags of clothes for the boy, and said he would pay for them; which was done accordingly. The prince added more, saying, "I cannot see a Christian perish for want of food and raiment, had I the power to support them." Then he prayed that God might support the poor and needy, &c.* This boy made a bad return for the kindness of the prince. He gave information against him to the militia, but fortunately was disbelieved.

Ned used to play "antics and monkey tricks," to divert Charles and his friends in their distresses. His simplicity, and the singular circumstances of the party, enabled the poor fellow to speak to his

* The writer here transcribes from a report of Burke's adventures with the prince, taken from Ned's own mouth in September, 1747, by the Rev. Mr. Forbes, Episcopal minister at Leith. What follows is taken from other manuscripts of Mr. Forbes, in possession of the writer, and is here printed for the first time.

superiors with the utmost possible freedom, without giving any offence. According to the report of a boatman who was of the party, "Ned was always the rough man. I have seen him frequently at 'Deil speed the leears!' with the prince, who humored the joke so well, that they would have *flitten together like twa kail-wives*, [scolded like two herb-women,] which made the company to laugh and be merry, when otherwise they would have been very dull."

"One of the soles of Ned's shoes happening to come off, Ned cursed the day upon which he should be forced to go without shoes. The prince, hearing him, called to him and said, 'Ned, look at me!' when (said Ned) I saw him holding up one of his feet to me, where there was deil a sole upon the shoe; and then I said, 'Oh, my dear! I have nothing more to say. You have stopped my mouth indeed.'"

After being for two months under Burke's guidance, the prince was compelled to part with him and the rest of his little party, in order to put himself into the care of Flora Macdonald, who undertook to conduct him, in the disguise of a female servant, to the Isle of Skye. Burke then passed, a solitary fugitive, into his native island of North Uist, where he lived for seven weeks in a hill called Eval, feeding for twenty days upon nothing but dulse (a kind of sea-weed) and shell-fish. The extremity of his case was great, for at that time a paper had been read in all the churches, forbidding any one to harbor, or give so much as a meal to any of the rebels, under pain of death. Oliver, a married brother of Ned, did actually, from mere fright, refuse him the least succor; whereupon Ned thought himself entitled to steal one of Oliver's sheep, and make his own use of it. On the other hand, Jacob, an unmarried brother, did all he could in Ned's behalf, encountering every hazard cheerfully, ["God bless poor Jacob!" interjects Mr. Forbes.] "One night Ned, being in great misery, went to steal a boat, in order to take the sea; but some fishers being near by, and hearing a noise, came out with a force, thinking this to be an enemy. Ned was obliged to leave the boat, and take to his heels, for he had far rather have been killed or drowned than to be taken prisoner, because by that time it was well known he had been the prince's servant; and therefore he was afraid, if taken, they would put him to the torture, to make him tell all that he knew, and he could not bear the thoughts of doing hurt to anybody."

Another relative was so base as to give information against Ned; but luckily, like the ungrateful boy, he was not credited. One day he encountered one of the countrymen armed in behalf of the government, who at once recognized him. "Follow me," said the man. "To what place am I to follow you?" "Further into the country." "Friend," said Burke, "have you got any to help you?" "No;" and then he taxed Ned with having been the prince's servant. Ned answered, "Many a prettier fellow has been his servant." After a little more altercation, Ned drew forth a pistol, at which his friend vanished with all possible speed. He afterwards brought a party to the spot; but Burke had meanwhile hidden himself effectually. Soon after this, while concealed in a cave, and when no friend durst be seen with him, a shoemaker's wife came under cloud of night, and brought him a little food.

"A little before this, Ned had gone one day to buy a pair of shoes at Clatachcaranish, when General Campbell, Captain Fergusson, and their whole force, came to the place. Ned was then in a sad perplexity, and did not well know what to do. Spying an old black coat and an old pair of breeches in the house, he put them on, hiding his own clothes under a chest, and went out at the door unconcerned. He stood a while among the men, and conversed easily with them; then slipping by degrees out amongst them, he got to the hills to his old cave. Jacob Burke and the shoemaker's wife got his clothes, (a Highland dress,) and brought them to him."

Tiring at length of this wretched life, Ned went and gave himself up to an old master, Macleod of Talisker, who, receiving him kindly, was the means of his getting to Seaforth's country on the main land, where he remained with his later master, the aide-de-camp, till the passing of the act of indemnity. He then returned to Edinburgh, and quietly resumed his humble duty as a sedan-carrier.

Probably it never occurred to the simple mind of Ned Burke that he had done anything more than a very plain piece of duty during the summer of 1746. If he formed any idea of a reward, it must have been of the simplest kind. Thus lightly did the honest fellow talk of the prince's obligation to him, when conversing with Mr. Forbes—"If the prince do not come and see me soon, good faith, I'll go and see my daughter, [alluding to the prince having adopted his name when in the female disguise,] and crave her, for she has not yet paid her christening money, and as little has she paid the coat I ga'e her in her greatest need." Ned's old companion, Donald Macleod, the boatman, spoke in high terms of him to Mr. Forbes, as an honest, faithful, trusty fellow. Donald said that, "in the event of a R——on, [restoration,] Ned would carry a chair no more, for he was persuaded the prince would settle a hundred pounds a year upon Ned during life; and he could affirm it for a truth, that not any man whatsoever deserved it better." "Honest Ned," says Mr. Forbes, "is not (by his own confession) much above forty years of age, and is both stout and sturdy for all he has gone through."

Alas! Burke was not long to survive these perilous adventures. He died in Edinburgh on the 23d November, 1751. Mr. Forbes inserts in his manuscript the following epitaph for the worthy sedan-carrier:—"To perpetuate the memory of Edward Burke. Born in a humble cottage, and of mean parents, in the island of North Uist; ignorant of the first principles of human learning; doomed to converse with lowly people; and exposed to all the various temptations of poverty. Happy in these advantages, since thereby his genuine worth was the more conspicuous! Fidelity and disinterested friendship eclipsed his other virtues. Let the venial tribe behold and admire, and blush, if yet a blush remains! Learn by his example, oh, ye great! He preferred a good conscience to thirty thousand pounds!"

One cannot but seriously ask if the age of Walpole is not somewhat *redeemed* by its being also the age of NED BURKE, the SEDAN-CARRIER.

From Chambers' Journal.

THE "DWARF NATION" IDEA.

The world has long been haunted with the idea that somewhere in Africa there is a nation of Tom Thumbs. The common report of ancient writers placed their habitat on the shores of the Red Sea; but as European knowledge advanced, it has been shifted by degrees, till now it is fixed on the south of Kuffah, the most southern province of Abyssinia. In the middle ages, when the attention of Europe was absorbed by the further East, the seat of the pigmies was transferred for a time to India. This seemed as likely a domicile as any; for it was recollected that the first Greek visitors had found in the Punjaub a people eight feet high, and another with only one eye—the latter, in order to make up for the deficiency, being provided with a pendulous ear, long enough to be used for wiping their faces like a handkerchief. Travellers, accordingly, received well-authenticated accounts of the existence of a nation of dwarfs on the Indian continent, and others, more fortunate, actually *saw* them. Oderic is satisfied with describing them from report; but the less credulous Mandeville only believed his own eyes.

The interest of Europe was of course mightily roused by the confirmation of so ancient a tradition, and it waited with much anxiety for the arrival of a specimen of the diminutive people. And the specimen came. And not one alone, but many. Dwarfs became a staple article of commerce; and if they had only been *living*, they might have been the progenitors of a nation of their size nearer us than Abyssinia. But the dwarfs imported from India were defunct—dried, stuffed, and spiced; Lilliputian mummies, in short, intended to grace the cabinets and museums of the learned and the curious. Perhaps, in process of time, it excited some surprise, as well as discontent, that there was not one living specimen among them. Perhaps the humanity-mongers of that day got up an agitation about the impropriety of killing little men for exportation; but so it was, that the small, shrivelled anatomies came to be looked upon with some reserve, till the trade was finally stopped by the following bulletin from the Venetian traveller, Marco Polo:—

"But you must know that those who bring the little men from India practise a great deception. I assure you the figures to which they give the name are manufactured in this island in the following manner:—There is a species of small monkey, with a face resembling the human, which they catch, skin, and shave off the hair, except on the beard and chin; having thus moulded them into a human semblance, they dry and preserve them with camphor and other articles. But it is a gross deception; for neither in India nor in any other country, however savage, are there men so small as these pretended ones."

This acute old traveller, however, was thought to carry his disbelief too far. It was very well to set people right as to the non-existence of a dwarf nation in India, especially after everybody had become tired of the nasty little anatomies; but to throw discredit upon the whole pigmy race—to turn all history into a fable—was a scepticism nothing less than profane. Marco Polo, therefore, was believed when he related what he knew of his own knowledge, but disbelieved when he dogmatized in other matters; and the ethnologists once more turned their eyes upon Africa, in the hope of finding, in some oasis of its vast wildernesses, a nation of human beings at the most three feet high.

Towards the close of the seventeenth century, Ludolph the learned Orientalist appears to confound, in some extraordinary way, the pigmy with the monkey tribe. In his history he calls them dwarfs, but describes them as apes; and yet, in a note on his map of Ethiopia, he states that the king of Zingaro, (a territory in Southern Abyssinia,) was a monkey. De Lisle, in the following century, restores the human nature of the dwarfs, but edges them out into the wilderness beyond the most southern province of Abyssinia; and in the present century, one of our recent travellers, Major Harris, describes them (from report) with some minuteness in his "Highlands of Ethiopia." "Both sexes," says he, "go perfectly naked, and have thick, pouting lips, diminutive eyes, and flat noses * * * they are ignorant of the use of fire * * * fruits are their principal food; and to obtain these, women, as well as men, ascend the trees in numbers, and in their quarrels and scrambles not unfrequently throw each other from the branches * * * They have no king, no laws, no arts, no arms, possess neither flocks nor herds, are not hunters, do not cultivate the soil, but subsist entirely upon fruits, roots, mice, reptiles, ants, and honey."

Mr. Johnston, in his travels in Southern Abyssinia, points out the applicability of this description to the *monkey tribe*, and ridicules the idea of expecting to find a new variety of the human race in the deserts of Africa. He concedes, however, that this monkey may be of a family admitting of more complete domestication than usual, and supposes that it may be identical with the house-monkey of the Egyptians, which was accustomed to gather fruit for its masters, and perform other menial offices. But we would remark that the dwarfish size of the supposed pigmy people is against this supposition rather than otherwise; for the Egyptian monkeys, at least as represented in their sculptures, were in general strapping personages, somewhere about eight feet high.

It was not wonderful that Ludolph should have taken little pains to discriminate between men and monkeys; for in his time the notion was current even among the learned, such as Monboddo and Rousseau, that the two were of the same species, and that their moral and physical differences were the result of circumstances. Even Buffon declares, that if our judgment was limited to figure alone, the ape should be regarded as a variety of the human species. Before these great writers, Bontius, the chief Dutch physician of Batavia, described them as wanting nothing of humanity but the faculty of speech. Their females, he assures us, had even a sense of modesty. Linnæus likewise gave an account of a Javan ape which it would be difficult to distinguish from a man. As for Aristotle, he looked upon the pigmy as a connecting link between the human and brute kind, partaking of the nature of both.

The grand difficulty about the African nation of dwarfs is the fact, that not a single specimen has been seen either in Abyssinia or Egypt. The reason given for this is a very lame one—that the little men are so useful as slaves where they are caught, that not one of them is sold out of the country. The same thing might have been alleged of the Indian pigmies we have mentioned, but it was seen that the excuse would not answer; and thus the curiosity of the savans of Europe was obliged to be satisfied

with pickled monkeys. But it must be observed that those who deny the existence of a race of little men, by no means dispute that of a nation of slave monkeys. Mr. Johnston himself contends that their non-appearance in the neighboring countries, into which slaves are carried, *proves* them to be merely a more sagacious kind of ape; and he refers to the practice of the ancient Egyptians in calling to their aid such a species of animal-servants. The apes of the Egyptians, however, we repeat, were not of the pigmy kind. They resembled more the famous warriors of Ceylon; and are sometimes represented in the sculptures of Upper Nubia, as they are in the caves of Ellora, in the employment of drawing cars yoked with horses.

It must be admitted, however, that the monkeys of India have either been somewhat exaggerated in the sacred poems, or that their descendants have greatly degenerated. When they undertook to assist Ram in recovering his wife Seeta from the demon-king of Ceylon, they carried with them sundry fragments of the Himalaya for the purpose of constructing a bridge across the strait to the island; but on learning that Ram had managed the affair without them, they dropped their burdens, and thus formed the Vindya range of mountains, some six or seven hundred miles long. But this, we apprehend, will be too much for the belief even of the believers in modern pigmies, and so we shall say nothing more about it.

Although it is difficult to believe in the existence of a pigmy nation even in Africa, where we see such grotesque varieties of the human form, we trust that, by and by, we shall have some more definite information touching the monkey tribe, who have had the folly to get themselves into slavery through a display of their reason. The gigantic black orang, described in the "Naturalist's Library," who attacks the elephant and lion with clubs and stones, and carries of the young negro-women to the forest, like Allen-a-Dale, has no resemblance to the civilized monkey of Ethiopia. The latter is more easily identified with the smaller and gentler kind of the same family; but even these, we are sorry to say, get speedily addicted to the bottle when temptation comes in their way. The orang-outang of Borneo, described by Dr. Abel, exhibits a greater appearance of consanguinity; but if the learned naturalist intends to draw a general portrait, we must protest against his assertion that the creature is utterly incapable of walking in an erect posture, and that his arms, like the fore-legs of other animals, are requisite to support his body. Mr. Earl, a later visitor, saw one in the same island, who walked about habitually on his hind-legs, and only took to all-fours when alarmed. This creature was extremely gentle, completely devoid of monkey mischief; and when playing with children, which he was very fond of doing, "might be seen running after them with his eyes shut and his arms spread out like a child playing at blind-man's-buff." Another observed by the same gentleman was only eight months old, and presented, at a little distance, a perfect resemblance to a negro child, more especially when its nurse had tied a napkin before it, and was feeding it with a spoon. It crawled about on all-fours like an infant of the same age, and never appeared so happy as when rolling on the floor, hugging a towel or a piece of cloth.

Dr. Abel's orang ate all kinds of food, and drank wine and spirits, although he preferred beer and milk. He neither practised the grimaces and antics of other monkeys, nor possessed their perpetual proneness to mischief. He was grave and melancholy both in aspect and disposition, was sensible of gratitude and friendship, and on board ship was fond of sitting at his cabin-door enjoying his coffee, "quite unembarrassed by those who observed him, and with a grotesque and sober air that seemed a burlesque on human nature." Our philosopher, however, had some vanity. He was obviously ashamed of being caught playing with the other monkeys on board with the *abandon* he gave way to with the boys of the ship. These, on the other hand, who were of a smaller species, had not sense enough to make distinctions; they saw no difference between their grand friend, now that he was an inmate of the cabin and the companion of human beings, than when he climbed trees instead of masts, and cracked nuts and jokes with his comrades of the woods. The very first time they set eyes on him, they flew upon him with a vulgar heartiness which greatly disconcerted his new dignity, even while it gratified his simian nature; and after that he was seen to compound between the two sets of feelings, by treating them with reserve and hauteur in public, and having a desperate game with them in the rigging when the decks were clear.

There is no doubt that it would be highly gratifying to a practical age like this, if we could turn such exuberance of animal energy as is displayed by these creatures to some useful account; and for this reason we confess we are greatly taken with Mr. Johnston's idea of a nation of slave-monkeys. But that gentleman, while puffing away the pigmy dream, which was perhaps one of the last lingering superstitions of travel, replaces it with another, of which we admit we can make neither head nor tail. Hear his own words:—

"Nothing can be positively asserted, but I believe myself that we are on the eve of a most interesting ethnological and geographical discovery, that will at once afford a solution to all the strange and improbable accounts which have reached us respecting the inhabitants of Central Africa. What we hear of dwarfs, cannibals and communities of monkeys, may perhaps prove to be merely a muddied stream of information, conveyed to us through the medium of ignorant and barbarous tribes, but which may have some foundation of an unexpected character, in the existence of a nation in this situation, which, almost physically separated from the rest of the world by impassable deserts and unnavigable rivers, has continued in its original integrity that perfect condition of society which, once general, then almost extinguished, evidently preceeded the barbarism from which the present transition state has emerged, and which I believe to be gradually progressing to the reättainment of the previous excellence of the primeval social institutions."

This is a strain beyond Rousseau. The arts and sciences, of what we foolishly call civilization, but which is, in reality, a departure from it, are to be flung to the winds; and mankind, after four thousand years of error, are to return to that blessed state of primeval excellence which is described to be the present position of the nation of monkeys. The story of the pigmy tribe was nothing to this; and we do hope that, when our author stumbles upon his model people in some oasis of the African desert, he will at least send home a few of them, skinned and pickled, for the gratification of our barbarian curiosity.

From Chambers' Journal.

HER MAJESTY'S TOBACCO DEPOT, LIVERPOOL.

Two or three years ago, when visiting the London docks, I was favored with a sight of one of the largest storehouses in the world—the depôt of tobacco under the charge of the custom-house officials. That there should have been another such depôt in Great Britain, I entertained no idea, till, on a late occasion, when I visited Liverpool. There I found a tobacco warehouse connected with the customs, apparently equal in dimensions and importance to that in London, and giving an equally impressive notion of what John Bull, in his folly, habitually puffs into the atmosphere.

Entering by a dingy courtyard adjoining the Queen's Docks, I was conducted into this Liverpool tobacco warehouse. The first sensation on entering is that of an intense acrid odor, which affects not only the nostrils, but the breathing, for the atmosphere is loaded with tobacco effluvia. Somewhat inconvenienced by this feeling, we pass up an aisle or interval between rows of casks, and find ourselves in the centre of the vast apartment. The light, which is admitted by the roof, reveals hogsheads on hogsheads of tobacco, piled up on every side, leaving passages between for the operations of the attendants. The length of the building is five hundred and seventy-five feet, and its breadth two hundred and fifty; the roof being supported on small but strong cast-iron pillars, so as to afford the largest possible accommodation in the space. Great as is this enclosure, it has latterly been found too circumscribed for the storing of the large quantities of tobacco imported into Liverpool, and several additions to the building have recently been made. There is not a particle of architectural ornament about the structure. The exterior shows nothing but a dead wall; one side forms a wall to the dock, and the other is separated from the Mersey by a pleasant parade. Indeed, the whole building is nothing but a mighty shed, round which custom-house regulations have thrown an air of isolation.

All the tobacco which comes to the port of Liverpool must, except in special cases, be warehoused in this building. It is here examined by the owners or importers, who select that which is good, and on which they deem it profitable to pay the duty of three shillings per pound. That which is rejected is cast aside and burned. The hogsheads which contain the tobacco are roughly and widely made, but they are very firm and strong, and each contains about twelve or fourteen hundredweight When one is to be examined, it is brought from a heap, and set upright on the ground. The fastening of the staves at the lower part is unloosed, and the wood-work is then lifted bodily up leaving the tobacco exposed as a large compact cylindrical mass. A workman then digs into it with an iron crow-bar, and large pieces, like cakes, are removed. These are examined, and a judgment pronounced on their quality. A portion is pulled out as a sample, wrapped neatly up, and marked with certain cabalistic figures known to the initiated. The whole is then firmly pressed together again, and in a few minutes it is placed in the cask, hooped, and removed. Every piece of tobacco that leaves this warehouse must pay duty; and even the samples thus selected, small though they be, are charged, though, if they are again brought back, the amount is returned.

Nearly all the tobacco stored here is from the United States of America, but principally from the state of Virginia. It is all in an unmanufactured state, consisting of the light-brown leaves rolled together and compressed. The warehouse contains the largest quantity towards the beginning of winter, or just after time has been given for the autumn leaves to be gathered, dried, and sent across the Atlantic. On the day of my visit, it was calculated that about twenty thousand casks were in the warehouse; and if we suppose each of them to contain, on an average, twelve hundredweight, we have an aggregate of twenty-six millions eight hundred and eighty thousand pounds of tobacco, realizing a revenue to government of nearly four million pounds sterling. Although this, however, must have been the accumulated stock, the *yearly* quantity entered for home consumption in 1842 was 22,309,360, lbs; increased to this amount from 8,000,000, lbs. imported in 1798. The duty received in the former years was £3,580,164. The ideas called up by such a mass of tobacco are perfectly staggering. If the material ministered to the necessities of man, the sight of so many millions of pounds would be quite cheering. But to think that the tobacco, piled in such enormous quantities here, is all to vanish in smoke through the medium of the mouths of enlightened Britons, quite overpowers the imagination, and completely baffles the grasp of common sense. The idea of a nation like the British, which is now doing such wonderful work for all humanity and all time, gravely, and as a matter of course, puffing out in smoke, or inhaling in dust every year, more than twenty-two million pounds' weight of tobacco, and finding ways and means to pay between three and four million pounds sterling for the privilege to do so, is really, to say the least of it, very humbling to the pride of the nineteenth century. And yet this is not all. I have merely indicated the quantity on which duty is paid; but Mr. Macculloch calculates that one third of what is consumed in Great Britain is supplied by the smuggler; which will give, as the grand annual total, about thirty-three million and a half pounds' weight! This is only about a sixteenth part less than the quantity we require every year for home consumption of the more innocent and amiable luxury, tea. Tobacco may, as Arthur Cayley in his Life of Sir Walter Raleigh says, be

> "Poison that cures; a vapor that affords
> Content more solid than the smile of lords;
> Rest to the weary; to the hungry food;
> The last kind refuge of the wise and good."

But all the imagination and fancy, wit and humor of poets, will not bate one jot of our sadness at the mighty monument of human frailty exhibited in these great receptacles.

About the centre of the warehouse is built a large furnace, which was crackling and roaring most lustily on the day of my visit, while hot gleams shot out from chinks in the massive iron doors, giving evidence of the fearful fire within. In every establishment there is always something known by a jocular nickname, and the standing joke about this furnace is to call it "Queen Victoria's Tobacco Pipe." All the rejected tobacco is burned in this right royal tobacco pipe. Fortunately for the citizens of Liverpool, the tobacco warehouse is at a considerable distance from all dwelling-houses, otherwise the strong fumes arising from the furnace-chimney would prove anything but conducive to health. Behind the furnace is a large circular recess, in which the tobacco ashes are piled up to

the extent of several cart-loads. They are found useful in many chemical preparations, and being of a siliceous nature, form a good dentifrice.

At one end of the warehouse there is a division called the Cigar Room. This contains myriads of cigars, neatly and firmly packed in convenient cases. None of these are of course allowed to be taken away without the payment of duty, though, in cases where they are required for ships' stores or exportation, a drawback, or repayment of the duty to the extent of 2s. 7½d. per pound, is made. Besides the foreign cigars, a vast quantity is made at home; but it is clearly understood, from the exposés that have been made from time to time in the London newspapers, that many of the latter are of British growth as well as British manufacture. Not only are dried cabbage leaves, and other materials of the kind, liberally used for the purpose, but in a recent case inquired into by the Lord Mayor at the Mansion-house, it was shown that some cigars are entirely composed of *brown paper*. In this cigar room there are also large, heavy packages of the finer sorts of tobacco known by the names of "Cavendish," "Negrohead," "Honey-dew," &c. This finer sort is obtained from those parts of America where the climate is warmer than in Virginia. Here also are piled numerous packages of a cubical form, one foot thick, containing South American tobacco, the covering consisting of cattle skins, apparently dried in the sun, and stitched firmly together. They were lying round in great numbers, and resembled a mighty pile of brown and variegated hairy trunks. It is curious, indeed, to find here, wrapping tobacco, the skin of some noble animal that may have ranged freely over South American plains, until the desire to "turn an honest penny" by the sale of its hide tempted a hunter to ensnare it with the fatal lasso. Several of these packages, which had been slightly damaged by the salt water, had been opened, and, as I understood, were considered not good enough for the smokers of this country, and were to be exported to Africa for the use of the negroes. In the same room, some men were engaged in chopping off the hard woody fibres of the canes, on which the owners would not pay duty. These fragments are all gathered together, and, on the principle that all is valueless which pays no duty, are cast into the fire.

The utmost attention is paid to accuracy in weighing the tobacco previous to charging it with duty. Scales which weigh about twelve or fourteen hundred weight at a time are used; and after the workmen have steadily adjusted the pile in one of the scales, they all withdraw. A circle is formed, within which none but the proper officers are allowed to enter; and when they have ascertained the weight, a signal is given, the spell is dissolved, and the pile is removed. The celerity with which the workmen fix it again in its covering is surprising. The staves, which seem as if they were kept from falling to pieces only by a slight attachment to one of the ends, are lifted up in a mass, and brought down, covering the material. A rope is slipped round the lower part, to keep them together, the hoops are rapidly fixed on, and the hogshead tilted up and placed under a powerful screw, which compresses the tobacco firmly down, previous to the fastening of the other end.

In the dock adjoining the warehouse the tobacco vessels are generally moored; and the hogsheads carted in a few minutes from the ship's side into the safe keeping of her majesty's revenue officers. The warehouse is the property of the corporation of Liverpool, which receives from government an annual rent for it of £4364, 5s.

It may truly be said that this tobacco warehouse is a "commercial wonder;" and still more truly that it is a "moral wonder." It is wonderful to think that all this mighty store, springing from the soil of the new world, is soon to be cast forth into our atmosphere in clouds of smoke from meerschaum, cigar, and "dudeen;" and still more wonderful to think of the dreamy visions and cloudy air castles, and damaged health and mean habits, to which all this smoking must give rise. It is indeed a moral wonder, which men ought to contemplate with sad and serious feelings.

From Chambers' Journal.

GOSSAMER MITTS.

Blessed are the efforts of honest labor, wherever and whensoever these efforts are fairly made and courageously persevered in! What interesting tales have not been told of the successful efforts of the inhabitants of a Swiss valley in making watches, of the dwellers in another valley in that country in making toys, and of the natives of the Black Forest in making clocks! In our own country, efforts of this kind, in the most disadvantageous circumstances, are also not unknown. The fame of the Shetland-knit hose and shawls is now widely spread. So, in the sister country, Ireland, are there some remarkable specimens of ingenuity in the manual arts, particularly those which are practised by women. In a late number we presented an account of an unobtrusive but interesting manufacture of an imitation of point lace, at Curragh Chase, in the county of Limerick. From the following paper, put into our hands, purporting to be a communication to the "Tulketh Hall Mercury," we are gratified to find that a somewhat similar manufacture has been established at Stradbally in Queen's County.

"There is a pretty little village in Ireland, which lies in a secluded valley, embosomed in trees, and encompassed by beautiful commons. A river passes through it, trees grow in the very street, and the church, with its venerable tower and simple graveyard, adds grace and dignity to its aspect. Enter from what point you will, you are struck with the quiet beauty and richness of the scenery. Hills rising behind hills, some thickly wooded—some bare, and dotted with sheep—appear to shut in this sweet and sheltered spot from the coarser and wilder country beyond.

"Large well-cultivated fields—fine high-bred cattle—flocks of carefully-tended sheep, with their pens and feeding-cribs—agricultural implements, of the newest and best description in familiar use—denote that the fine houses and noble domains are inhabited by a resident gentry, and give an idea of stability to the general appearance of comfort, which is elsewhere rarely seen in Ireland. All looks lovely and peaceful in nature, and would almost remind an English traveller of his own happy and highly-favored land, except for one sad and striking contrast—the wretched cabins, and the dirty and careless habits and dress of their inmates. Dirt, which cannot enter into the imagination of a tidy English housewife, is absolutely unnoticed by many among the poorer class of Irishwomen. The pigs and the children share in the meal of potatoes, and appear equally to thrive in the surrounding filth; and the most hopeless feature of the case is, that

the people are quite contented with their degraded condition, and have no ambition to rise beyond it.

"One lady saw, with the discerning eye of practical benevolence, that the want of regular employment for the females partly generated this carelessness of domestic comfort, this contentment with deplorable poverty; and she set about remedying the evil by procuring remunerative employment for them. Needlework was not to be had in this remote place; spinning does not pay for the time, and is exhausting and injurious to the frame. Knitting might succeed; knitting was all the fashion. To set up a knitting manufacture was, therefore, her endeavor. She learned the art herself, that she might be able to teach it. First she began with shawls, and now her manufacture is of the finest possible silk, thread, and cotton gloves, mittens, and stockings—so fine and delicate in their texture, that they seem wrought by the hands of fairies alone; and they have obtained in England and Ireland the name of 'Cobweb Mitts,' and in America 'Impalpable Mitts.' I shall now conclude by giving this lady's own report of her undertaking and progress, written for the Duchess of Kent, and by saying that this village is 'Stradbally,' in the Queen's County; and that the lady is 'Mrs. Leadbeater,'* daughter-in-law of that Mrs. Leadbeater who strove to raise her country in the scale of nations by her useful and benevolent works, 'The Cottage Dialogues,' 'Landlord's Friend,' &c., &c. The younger lady, substituting the needle for the pen, endeavors also to improve her countrywomen in their domestic and moral habits, and is worthy of bearing that honored and distinguished name."

Here follows Mrs. Leadbeater's account of her most interesting and creditable attempt:—

"It is now nearly six years since I first made the attempt of teaching fancy knitting, to assist one miserable family, consisting of a mother constantly confined to bed, and her daughters. From this small beginning the number employed has now increased to over two hundred.

"You may not be aware that, in the south and middle counties of Ireland, the chief means of earning for young females is by out-of-door employment, such as binding corn after the reapers, making hay, planting, and afterwards digging the potatoes. This custom is very unsafe for young girls, exposing their bodily and moral health to much danger, besides inducing slovenly habits at home. They are wearied when they come in from work, and are satisfied to sit down to a wretched meal of potatoes, sometimes with milk, but more frequently without, in an uncleaned 'cabin,' for we cannot call the Irish peasant's home a 'cottage'—that word breathing of comfort and cleanliness.

"In England you have no conception of the filth as well as misery of an Irish cabin. Finding my experiment to succeed beyond my expectation, and many others most anxious to learn, I determined to extend it further; being impressed with the importance of providing some remunerative employment for the females which would create a love of order and cleanliness in their dwellings, besides giving them the means of subsistence; for even the out-of-door occupation is not sufficient for that purpose. I began on coarser and common materials, gradually improving until the manufacture has attained its present degree of perfection. Those who have acquired the art now teach the beginners; and as the learners are unable to pay, the first money earned by them is given to the teacher as her perquisite. Some work one pattern, some another—no one of them knows all the stitches. Any new pattern that I obtain, I learn first myself, and then teach it to one of the best knitters. Most of them being unable to read or comprehend the theory, must learn it in this mechanical way, and their knowledge then becomes an additional source of profit to them. Many have found it difficult to believe that such fine texture has been manufactured with knitting-kneedles, by some of the Irish peasantry, with hands rough, coarse, and hard! If the refined English lady could see the miserable abodes in which this delicate fabric is wrought, she would feel a double pleasure in wearing the cobweb mitts; aware that in so doing, she is bestowing blessings of various kinds upon many a wretched fireside—food, fuel, clothing, peace, plenty, and good habits!"

The communication which brought us the above enclosed a pair of the mitts. They are of black silk, almost as fine as a gossamer web; and we should think that, on becoming known, they will be the object of universal request among ladies. We need hardly add, that we wish all the blessings which usually attend honest industry may visit the homes of the ingenious knitters.

* Daughter of Joseph Fisher, one of the most influential merchants of the city of Limerick.

From Chambers' Journal.

MR. COLMAN'S VISIT TO ENGLAND.

SECOND ARTICLE.

In our previous article, it was mentioned that Mr. Henry Colman is an American agriculturist, who had visited the United Kingdom with the view of procuring information on subjects connected with his profession. We have referred to his ideas on the general aspect of England—the beauty of the country, and yet, amidst all its rural loveliness, the too frequent inferiority of its husbandry. Turning from the appearance and management of the soil, he speaks of the persons who reside upon and cultivate it.

To an American, it appears strange that men of capital should be found renting land; and it is still more surprising that such tenants should, in some instances, expend thousands of pounds on manures and grass seeds; yet experience, he says, "has demonstrated that in these cases the most liberal outlay of capital is the most sure to be followed by successful results." Such outlays of course only take place when leases for a term of years are granted; and it is generally the want of these that discourages substantial improvement. Our tourist acknowledges that the payment of rents acts as a stimulant to industry—an admission of some value; the proof of the fact, however, on a comparison of the condition of the American and British farmer, being too evident to be disallowed. Mr. Colman is pleased with the practice in Scotland of granting leases of nineteen years. "One would be led to infer that the terms on which landlords live with their tenants, in Scotland, must be honorable and just to both parties, since renewals are common: the same estates have been, in many instances, in the same families for a century, and the expenses incurred in some cases by tenants, in the erection of permanent buildings and other fixtures, are very heavy; showing the confidence of the tenant in his landlord. One farm was pointed out to me where the tenant had recently died, leaving only one child,

an infant son. In this case, that the lease might be retained in the family, three of the neighboring farmers had agreed to take the whole management of the estate until the young man came of age. In such cases, there is very little difference between a lease and a freehold in fee-simple." The Scotch lease, in point of fact, is a species of inheritance—a thing belonging to the family for such a term of years as makes it worth while to obtain and preserve it. The obligation to pay a pretty smart rent stimulates the farmer to try all proper means to make the land productive; but as the obligation has usually some reference to the price of grain for the time being, he is to a certain extent protected from absolute ruin, while the landlord may be said to participate in his risk. Landlords are sometimes harsh, though, in the main, getting a poor return for their money; nevertheless, observes Mr. Colman, "I believe there is a great deal more abuse of power on the part of farmers towards their laborers, than on the part of landlords towards their tenants. The farmers can protect themselves; the laborers, in general, are without power. Indeed, the more cultivated and improved the education of a man, and the higher the condition which he occupies in society, the stronger are the inducements to a just and honorable conduct, not only in his enlarged mind, but in the increased value of character to such a man." Without imputing wilful cruelty on the part of farmers generally towards their dependents, we fear that, in too many instances, they may be convicted of something worse than neglect. It is undeniable that farm-laborers are, as a class, poorly paid, and little sympathized with. "I will not say they are in a degraded condition," observes Mr. Colman, "for that would not, in any sense, apply to them, unless where, by their own bad habits, they may have degraded themselves; but they are in a very low condition, and extremely ignorant and servile. They rarely, as with us, live in the house of their employers, but either in cottages on the farm, or in a neighboring village. They are usually comfortably clad, in this respect contrasting most favorably with the mechanics and manufacturers in the cities and large towns; but they are, in general, very poorly fed. Their wages, compared with the wages of labor in the United States, are very low. The cash wages paid to them seldom equals the cash wages paid to laborers with us, and our laborers, in addition to their wages in money, have their board; but the English laborers are obliged to subsist themselves, with an occasional allowance, in some instances, of beer, in haying or harvesting. The division of labor among them is quite particular—a ploughman being always a ploughman, and almost inseparable from his horses; a ditcher, a ditcher; a shepherd, a shepherd only; the consequence of this is, that what they do they do extremely well. But they appear totally destitute of invention, and have evidently little skill or ingenuity when called upon to apply themselves to a work different from that to which they have been accustomed. Their gait is very slow; and they seem to me to grow old quite early. The former circumstance explained itself to me when I examined and lifted the shoes which they are accustomed to wear, and which, when, in addition to being well charged with iron, they gather the usual amount of clay which adheres to them in heavy soils, furnish at least some reason why, like an Alexandrine verse, 'they drag their slow length along.' There are occasional instances of extraordinary good management where they are enabled to accumulate small sums; but in no case, under the best exertions, can they make from the wages of labor anything like a provision for their old age and decay."

The condition of the rural population in Scotland seemed to the traveller to present some pleasing but also some bad features. The practice of exclusively employing only unmarried men, and lodging them in bothies, or huts, by themselves, meets with just reprehension. "It is not difficult to infer that, where young men and others are turned into a hovel together, and without any one to look after their lodging or prepare their meals, the style of living cannot have the advantages even of the wigwam of a North American savage; for there, at least, there is a squaw to provide food and look after the premises." A practice equally vicious, if not identical with that of the bothie system, is the putting unmarried ploughmen to sleep in stable-lofts; and to this Mr. Colman does not allude. Will it be credited by Englishmen that Scottish farmers—men of capital and general intelligence, as well as professing Christians—should actually make a practice of sending their servants to sleep among cattle? Yet such is the case; and though it would be difficult to devise a more effectual means of demoralization, such means are not wanting. Once a year, during harvest, there may be said to prevail a wide-spread and long-accredited system of breaking down all sense of virtue or decency among the laborers. We here allude to the method of lodging the large bands of reapers, native and Irish, men and women, of whom sometimes as many as two hundred live for a time together. "I was curious to know," says Mr. Colman, "how so many people were lodged at night. In some cases they throw themselves down under the stacks, or upon some straw in the sheds, or outbuildings of the farm; but in the case to which I refer above, I was shown into the cattle-stalls and stables, the floors of which were littered with straw; and here the men's coats and the women's caps and bonnets upon the walls, indicated that it was occupied by both parties promiscuously. This was indeed the fact. Each person, as far as possible, was supplied with a blanket, and these were the whole accommodations and the whole support. This was not a singular instance. I am unwilling to make any comments upon such facts as these. They speak for themselves. They are matters of general custom, and seemed to excite no attention. I do not refer to them as matter of reproach to the employers, who were persons of respectable character and condition, and whose families were distinguished for their refinement; but it presents one among many instances in which habit and custom reconcile us to many things which would otherwise offend us, and lead us to view some practices, utterly unjustifiable in themselves, with a degree of complacency or indifference; and as unalterable, because they have been so long established. I believe there is only one part of the United States where anything resembling such a condition of things prevails, or would be permitted; and there only among a class of beings whose claims to humanity seem not very well established in all minds, and whose degradation, on account of their complexion, appears absolutely hopeless. But even here, this indiscriminate consorting is not common; nor would it be permitted by any respectable planter." We hope these remarks will not be without their due effect on the minds of our agriculturists, who, erring from no deliberate purpose,

will be the more inclined to remedy the evils alluded to.

This intelligent and kind-hearted American feels acutely for the ignorance of letters, and consequently mental apathy, manifested by the bulk of the English rural people; and, from experience, combats the false idea that education would be injurious to the laborers. "Who does not know the difference between a stupid and an intelligent laborer; between a man scarcely raised above the brute which he drives, and a man whose faculties are all awake, and who is constantly upon the alert to discover and adopt the best mode of executing the task which he has undertaken; between a beast altogether the creature of instinct, or a mere machine, moving only as it is impelled, and unable to correct its own errors, and a thinking, knowing, reasoning animal, always searching for the right way, making all his actions subservient to his judgment, and gathering continual accessions of power and facility of action from his own and the experience of others? Every one will admit that the more intelligence, the more skill, the more knowledge a man has, the better is he qualified, other things being equal, for the management of a farm. It holds equally true that the more intelligence, the more skill, the more knowledge a laborer has, the better is he qualified to assist in that management, and to perform the part which belongs to him in the working of the whole machinery." The American laborer having been educated and taught to depend on himself, to inquire, to reflect, to observe, to experiment, occupies a comparatively high station in the scale, and will push, unassisted, through numberless difficulties. Let the English laborer be exposed to the same educational influences, and no longer will he be quoted as a degraded and helpless being.

Mr. Colman makes mention as follows of an interesting attempt on an estate in Germany to adjust the claims of capital with those of labor:—"A German baron, with whom I have the pleasure of a friendly acquaintance, has given me an outline of his arrangement with his laborers, which, as far as it is practicable, deserves much consideration, as, according to his own account, it secures their industry, fidelity, and contentment. No human arrangements are perfect, and no human laws can be framed which the ingenuity of men will not contrive to evade; but as there appears in this plan every motive to good faith, good faith on both sides would seem to be all that is necessary to its successful operation. First, from the products of the place, the customary rent is paid, and the wages of the labor employed. The surplus remaining is then divided into five equal parts. Two of these parts are claimed by the proprietor for his skill, intelligence, and care, in the superintendence and management of the property; one part is retained as an insurance upon that part of the property which is liable to loss or destruction; one part is devoted to actual improvements upon the place; and one is divided among the laborers themselves, according to the rate of wages which they receive for their work. Whether these proportions are properly adjusted or not, I shall leave to the judgment of my readers. It is obvious that any others might be adopted which should be deemed more just. It is certainly an approach to an equitable arrangement, and my friend assures me that it works well. He says he leaves his estate at any time with a perfect confidence that his interests will be cared for and protected, and that there will be no waste of time, and no squandering of property, and no neglect of duty. Success is, in proportion, as much the interest of the laborers as of the proprietor."

This gentleman, who has three hundred men in his employment, says the system "works well; and that every year's experience gives him stronger confidence in its justice and advantages. First, his work is done; secondly, it is done in the best manner in which his laborers are able to execute it, because it is the interest of all that it should be done, and well done. The laborers have a system of rules and fines among themselves, always subject to his approbation, and, after being once approved, always rigidly enforced. They inquire, of their own accord, into the best methods of doing what is to be done; they point out mistakes which have been committed, and improvements which may be made, subject always to his judgment. If men are found unskilful or incompetent in the particular branch of duty assigned them, he is advised of it, and persons more suitable are selected by their judgment who best understand the capacities of their fellow-laborers for the work. They are held jointly responsible for any injury to the property, unless the offending person is found. An individual guilty of any neglect of duty, or any improper conduct, or any violation of the established rules, is mulcted in a pecuniary fine. The names of the offenders are always announced at the close of the year; and these fines go towards a general entertainment and festivity. The proprietor himself hears all complaints; and a laborer, whose bad habits are judged incorrigible, is discharged."

Mrs. Perkins' Ball. By M. A. Titmarsh.

The framework or germ of this jeu d'esprit is simple, as it ought to be; the mirth and fun are in the filling up. Mr. Titmarsh teaches "drawing, French, and the German flute," in the family of Mr. Perkins, and receives an invitation for himself and an *eligible* friend. The Mulligan of Ballymulligan, (location unknown.) an Irish chieftain, who repudiates the title of "Mr." as a Saxon insult, invites himself to accompany Mr. Titmarsh; and the doings of "The Mulligan," with the characters and conduct of the rest of the party, creating, as in a drama proper, the incidents of the piece, form the subject of *Mrs. Perkins' Ball.*

Mirth is the aim of a trifle of this kind, and laughter is the truest criticism. The jeu d'esprit, however, has more in it than suffices to create a passing smile or guffaw. It is a satirical picture of the "entertainments" and weaknesses of the middle classes, without a grain of bitterness or malice. The pictures, too, are animated by a kindred spirit, and not only illustrate the text but support it. The Mulligan in all dresses, but especially in full dress, realizes the Milesian to the eye; Mr. Minchin, the serious young barrister of the Western Circuit, pulling off his clogs and putting on his pumps in the hall, with the fine flunky looking down with insolent but good-natured indifference, as at a person who *walks* to a party, is capital: but, taking text and illustration together, the best is Mr. Ranville Ranville, of the Foreign Office—"such an ass, and so respectable;" he is a living picture of the sucking Red-tapist. But all are fresh from reality, without any intervening medium.—*Spectator.*

From Chambers' Journal.

LORD ROSSE'S TELESCOPE.

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THE telescopes, on which of course our attention was mainly riveted, are three in number, like the degrees of comparison—great, greater, greatest; and are all situated near to each other, so as to command a fair view of the heavens over the tops of the trees which bound the lawn. The smallest is contained in a dome-roofed edifice resembling an ordinary observatory, and therefore presents nothing exteriorly remarkable. The two larger are under no roof; they are open to the weather; great black tubes dangling from chains like the funnels of steamboats, lowered slopingly from the perpendicular. One of these is twenty-six feet long and three feet in diameter, and is adjusted so as to wheel round to point in any required direction. The other, which is appropriately called the "monster telescope," measures fifty feet in length by six feet in diameter, and is suspended between high and substantial walls, which permit its command of only a stripe of the heavens from south to north—an arrangement which, however imperative from the bulk of the machine, I was sorry to think must somewhat lessen its usefulness.

So much for a first glance of these wonderful astronomical instruments. Before we had walked round them, the steward, an intelligent and obliging young man, placed himself at our service; and, by way of beginning at the beginning, conducted us to the workshops where the whole apparatus was made. Our road proceeded through a clump of trees, and emerged on a courtyard on the right of the castle, where an entire engineering establishment disclosed itself. It was certainly something new to find a smelting-furnace in active operation, blown by a steam-engine, within a dozen feet of the drawing-room window of a nobleman's castle! The furnace was puffing away at a great rate; and a neat little engine was diligently occupied not only in blowing the bellows, but in giving motion to sundry shafts, belts, and pulleys. A large complex piece of machinery, designed to turn and smooth the specula of the telescopes, was at rest; and about a dozen men were here and there occupied with sundry minor operations. All the workmen who have, from first to last, been engaged in preparing the telescopes, or the apparatus connected with them, have been natives—a fact which will seem strange to those who are unacquainted with the aptitude for instruction of the Irish character. It will probably appear not less surprising that the instructor and superintendent of these artisans in their multifarious duties has been no other than Lord Rosse, whose accomplishments in practical science, independently of his rank, would place him in a distinguished position. As illustrative of his skill in this respect, an anecdote is related by the good folk of Parsonstown, to the effect of his lordship having on one occasion visited an engineering establishment in London, and there shown such a knowledge of mechanics, that the proprietor, in his ignorance of whom he was addressing, offered him a situation of some hundreds per annum—a compliment, one can fancy, which is not likely to be paid to many other members of the peerage. Devoted to pursuits involving mathematical calculations, he has been pretty constantly engaged, since 1826, in perfecting the means of telescopic observation; and on this interesting branch of science alone he is understood to have spent till the present time, as much as £30,000. Long continued and costly as have been these labors, they could not have realized their present successful results, unless they had been conducted with the most imperturbable patience and good-humor, together with a readiness to have recourse to new and hazardous expedients on all occasions of difficulty and defeat. On this account, the operations of his lordship more resemble the long and studious exercises of the old alchemists in their laboratories, than the proceedings of a modern man of science and letters.

It would be a very long story to tell all that Lord Rosse has done since he commenced his labors twenty years ago, and I need therefore refer only to the more important steps in his operations—a slight popular sketch being alone desirable in these pages. His lordship began by attempting to make a telescope, with glass lenses, of the old and usual kind. A short course of experiments proved that little good could arise from this effort, and he then adopted the principle of the reflecting telescope, an instrument differing considerably from a refracting or lens telescope, and of later invention. Sir Isaac Newton was the first who constructed a telescope of this kind, in 1666; and one which he made in 1672 is still preserved as a curiosity in the library of the Royal Society. The principle of the reflecting telescope is exceedingly simple. At the bottom of an open tube is placed a piece of polished metal, of a slightly hollowed or spherical form, called a speculum; and on this, as on a concave mirror, the object is reflected. The reflection may be seen directly by looking in at the upper end of the tube; but as this would partly intercept the rays from the object, it is customary to cause the reflection from the speculum to fall on a small flat mirror, placed obliquely at the proper focal distance in the tube, and then look in upon that by an eye-glass at the side. The power of a reflecting speculum depends, like that of a lens, on its diameter and degree of sphericity; or, properly speaking, its capacity for collecting the rays which stream from any object. In employing the exact spherical concavity, however, there is always a slight confusion to the eye, in consequence of the centre of the speculum giving the image or reflection of the object at a different focal distance from the parts at and near the circumference. This confusion, which is called *spherical aberration*, can be avoided only by forming the speculum with a parabolic curve; that is, a concavity slightly elliptical or oval; but the exceeding difficulty of producing this figure with mathematical accuracy, may be judged from the fact, that if two specula of six feet in diameter, the one spherical, and the other parabolic, were pressed into contact at the centre, the edges would not diverge from each other more than the thousandth part of an inch. The spherical form therefore, with all its defects, has usually been employed. The objection, which equally applies to spherical lenses, may be diminished or removed by the opposite aberration of a concave lens. Although the spherical aberration may in this manner be remedied in lens telescopes, there is one still more serious imperfection which it is difficult to avoid. A ray of white light, as is well known, is resolvable into several rays of different colors. In passing through a glass lens, these colored rays are refracted differently, and consequently present a confusion to the eye. This confusion, which is called *chromatic aberration*, has been attempted to be remedied by making lenses partly of flint and partly of crown glass, so as to accommodate the refraction of the different rays, and bring them to the same focus. Dolland's

achromatic telescopes, constructed on this plan, have been the most successful in this respect; but they do not perfectly meet the difficulty; and hence the probability of insuring greater accuracy in the reflecting than in the refracting or lens telescope.

Lord Rosse, at the outset, abandoned the spherical form altogether, and endeavored to produce a true parabolic speculum, which should be free from aberration. An approximation to the parabolic in small specula had previously been attained by certain telescope-makers by means of hand labor. His lordship attempted no such imperfect process: he invented a grinding and polishing-machine, by which, after repeated trials, he realized the means of making perfect specula of any dimensions, from one to six feet in diameter. A difficulty not less formidable impeded his operations—the casting of a speculum of sufficient size and strength. Herschel discovered Uranus with a speculum of forty-eight inches diameter; but it became tarnished, from defects of composition, and was abandoned for one of eighteen inches. That which was now desirable was a nice adjustment of metallic compounds, which, while affording a durable lustre, would also give that degree of ductility by which the speculum could be handled and ground without liability to fracture. After numerous trials, it was found that the best combinations were of tin and copper, in the proportions of rather more than two of copper to one of tin.* These proportions fused together, and cast in a mould, made a preferable speculum metal. Here it may possibly be asked, why not make a speculum of glass, and silver it on one side like a mirror? This was, in reality done by Short, an eminent telescope-maker about a century ago: the plan, however, which is open to some objections, has never succeeded well since. Besides, it must be recollected that it is not the glass of a mirror which reflects, but the metal on its back; and therefore, if a mirror can be made without a facing of glass, its reflection is more likely to be correct. The object of Lord Rosse, then, was to construct a large metal mirror, neither too soft nor too hard in substance, and of imperishable brilliancy of surface.

With a knowledge of the proper proportions to be used, Lord Rosse commenced making a speculum which should be three feet in diameter, by casting sixteen separate portions, to be soldered together afterwards. After repeated trials, he made one of this compound kind, and it was by the experience he acquired in doing so that he became acquainted with the method of casting a large speculum in a single piece. Several tormenting difficulties attended his first efforts. Small air-holes were formed in the metal, and the speculum cracked in cooling. A mould of sand, and subsequently a mould of cast-iron, failed in giving freedom from pores. The desideratum was a kind of mould which should retain the molten metal, and yet allow the air globules to escape. Such was at length discovered, and it is this which has deservedly stamped Lord Rosse's name with celebrity, reducing as it does the casting of specula to a certainty. The simplicity of the contrivance causes it to appear a matter of no great wonder; but, like the plan pursued by Columbus to make the egg stand on end, it is easy only when it is known. The contrivance consisted in making the bottom of the mould of layers of hoop iron, bound closely together, with the edges uppermost. By this means the iron conducted the heat away through the bottom, so as to cool the metal towards the top, while the interstices between the hoops, though close enough to prevent the metal from running out, were sufficiently open to allow the air to escape. At my visit I had an opportunity of seeing this singular mould; it was a large disk of malleable iron, the layers of which were about half an inch thick, and to all appearance so closely welded, that water could not filter through them.

The first large speculum thus made in a single piece was a round plate of metal three feet in diameter, nine inches thick, and upwards of a ton in weight. On becoming solid, it was removed, to be annealed, to a brick oven, the mouth of which is level with the ground, at the distance of a few feet. The oven was nearly red-hot when the speculum was shut up within it, and from this temperature it was allowed to become gradually cool, when the annealing was completed. The time required for annealing a plate of this large size is, I believe, about three weeks; and yet, with all this attention, so brittle is the metal, from sudden variations of temperature, that a warm hand laid upon it in a cold night will make it fly in pieces.

Following the mass to the next stage in its progress, we find it placed, with the face upwards, upon a turning apparatus. Here it is seen moving round slowly, immersed partially in water, in order to be kept cool, while a grinding or rubbing tool works on its surface. By means of this grinder, with emery and water, and the adjusted rotative motions, the proper parabolic curve, along with a certain degree of smoothness, is produced; after which the surface is similarly polished with resin, and some other substances. The required curve is ascertained in the following manner. The grinding is performed on the ground-floor of a house, adjoining which is a tower several stories high. On the top of this tower is erected a mast, the summit of which is ninety feet from the speculum on the grinding machine. To the top of the mast the dial-plate of a watch is fixed, forming a small round object relieved against the sky. When the workmen wish to try the capacity of the speculum, it is cleared of its grinder, trap-doors overhead are opened, the figures on the dial-plate are reflected on the speculum, and this reflection is seen at the regulated focal distance by means of a small eye-piece: in other words, a temporary telescope is formed without a tube; and by this ingenious yet simple device the speculum is wrought to that nice parabolic figure which brings the incident rays to an exact focus. Of the extreme accuracy required, we may obtain some notion from a statement of Lord Rosse, that an error of a small fraction of a hair's-breadth would destroy all hope of correct action; and Dr. Robinson mentions that the smallest inequality of local pressure during the polishing process, would be attended with the result of changing a well-defined star into a blot or comet.*

* Correctly, 126·4 parts of copper to 58·9 of tin.

* I have been indebted for some of these facts to an excellent article on Lord Rosse's telescope in the Dublin Review; likewise to an equally able article on the same subject in the North British Review. In the latter, the following technical explanation is given of the mode in which the parabolic figure is imparted by the turning apparatus. "The operations for this purpose consist, 1st. Of a stroke of the first eccentric, which carries the polisher along *one third* of the diameter of the speculum; 2d. A transverse stroke twenty-one times slower, and equal to 0·27 of the same diameter, measured on the edge of the tank, or 1·7 beyond the centre of the polisher; 3d. A rotation of the speculum performed in the same time as thirty-seven of the first strokes; and, 4th. A rotation of the

The speculum, nevertheless, was polished in the short space of six hours.

The speculum, so fortunately completed, was fixed or bedded on three iron plates, which gave it support, and then transferred to its appointed situation in the tube. This, as I have already noticed, is three feet in diameter and twenty-six feet long, and attached to an apparatus on the lawn, by which it can be brought to bear on any point of the sky a short way above the horizon. The machinery for moving it round and raising and depressing it is simple and ingenious; and notwithstanding its size, it may be adjusted with the greatest ease. Two step-ladders form part of the apparatus, and by these we mount to a gallery, which can be raised or lowered to any required height. In order to procure an observation, the tube is first brought to bear on the star or other object, and the gallery being raised, we ascend to it by one of the ladders. On reaching the gallery, which is a small railed platform sufficient to hold several persons, we find ourselves close to the telescope, near its upper extremity; and here, on looking through a small eye-piece fixed to the tube, we at once recognize in the obliquely-placed mirror within, the object of our observation. The tube is of wood hooped with iron, and the focal distance of the speculum is twenty-seven feet. I was rather surprised to find that the mouth of the tube remained permanently open, the natural idea arising in my mind being that the rain and vapors would enter thereby, and injure the speculum at the lower extremity. I was informed, however, that the telescope is lowered in wet weather, and that the speculum is confined in a case, the cover of which is withdrawn by an exterior action when required. A vessel of quicklime is also kept constantly in the case, for the purpose of absorbing the moisture and acid vapors by which the speculum might be tarnished.

The power of the telescope depends on the glasses employed in the eye-piece. This requires a little explanation. The rays collected by the speculum are directed on the mirror at the proper focal distance, and there reflected clearly, or brought within telescopic reach. A telescope must be employed to magnify the image, or draw it out; and accordingly a small telescope like a pocket prospect glass, technically an eye-piece, is used for this purpose. But this eye-piece requires to be used with discretion; its glasses must be shifted according to circumstances. Unless the atmosphere be exceedingly clear and dry, a powerful telescope will magnify its particles, and these will seemingly form a haze interceptive of lucid observation. Different densities, from contending streams of warm and cold air, will have a similar result; and if the atmosphere be excessively cold, as in a Russian winter, floating spiculæ of ice, invisible to the naked eye, will be magnified so as equally to interrupt perfect astronomical observation. Such contingencies present serious drawbacks to the increase of power in telescopes, and in the instrument we have been describing, they are attempted to be overcome by employing various eye-pieces, whose magnifying powers range from 180 to 2000—that is to say, taking the power of the naked eye as 1, an artificial power is applied to give an appearance from 180 to 2000 times greater.

The performances of this magnificent twenty-six-feet telescope were found to be far beyond those of any previously constructed instrument. Certain patches of light or nebulous matter in the heavens were resolved into clusters of separate stars; stars hitherto seen but dimly, appeared round and well-defined; and on the surface of the moon, valleys, mountain-tops, and craters of volcanoes were plainly visible. Gratifying as were these results, Lord Rosse considered that something still grander could be achieved; and before the twenty-six-feet telescope was well finished, he projected one of the extraordinary dimensions of six feet diameter in the speculum, with a tube of fifty feet long. The casting, grinding, polishing, and mounting of this monster speculum were pretty nearly a repetition, on a larger scale, of what had been previously done. Its focal length is fifty-three feet; it weighs nearly four tons; and as its diameter, as has been mentioned, is six feet, it has an area four times greater than that of the three-feet speculum. When finished, the speculum was placed in a square box, which is attached to the lower end of the tube, and by means of a door can be entered at pleasure. This box adds six feet to the length of the tube, which, like its predecessor, is of wood, hooped with iron like a barrel, and so wide, that a tall man could walk through it without stooping. It is this huge black funnel that I have spoken of as being suspended between high and strong walls. It swings with a clear space of twelve feet on each side; and so far it can be drawn aside, giving half an hour before and after the meridian. By means of a windlass, and a most skilful adjustment of chains and counterposing weights, it can also be brought to the zenith, or turned fairly round from south to north, always within its bounds of twenty-four feet. Enormous as are its dimensions, and although weighing altogether twelve tons, it seemed to me about as easily moved as the other telescope; and it is as much in the mechanical contrivances for effecting this purpose, as in anything else, that the peculiar merit of the structure consists.

At the period of my visit, few observations had been made by this monster instrument; some parts of whose apparatus, indeed, were not completed; but so far as a trial in favorable conditions of the atmosphere had been attempted, the results had been interesting and important. Nebulæ which had baffled the smaller instrument were now resolved into stars; thus adding strength to the growing impression that all nebulous matter—such as that luminous arch in the sky called the Milky Way—will ultimately yield to telescopic power, and be seen to be only assemblages of separate stars—suns, the centres of planetary groups like that to which our own system belongs. Unfortunately, the atmosphere during the two nights which I attended in Lord Rosse's grounds was not propitious for observation. I had an opportunity, for only a few minutes, of seeing a group of binary stars of different colors; and these certainly were distinct, clear, and lustrous, like a pair of glittering diamonds. The moon, on both the occasions of my visit, kept provokingly under a tract of clouds, and the hemisphere, except for a brief interval of time, was loaded with an Irish drizzle. Yet this was no solitary disappointment. Astronomers spend weeks at Parsonstown, and yet perhaps enjoy only one or two really good nights for observation. When to these atmospheric impediments is added the comparatively limited

polisher in the same direction about sixteen times slower. If these rules are attended to, the machine will give the true parabolic figure to the speculum, whether it be *six inches* or *three feet* in diameter. In the three feet speculum, the figure is so true, with the whole aperture, that it is thrown out of focus by a motion of less than the thirtieth of an inch."

lateral range of the great telescope, a long space of time will appear to be required for making a thorough and general search of the heavens.

Disappointing in some respects as may be the result of such transient observations as that which my time allowed me to make, not the less grateful will be the feelings of visitors towards Lord Rosse for his unexampled politeness and liberality in throwing open to them his workshops and the whole of the telescopic apparatus which adorn the beautiful grounds around his mansion. To use the complimentary language of a local writer*—"With a rank and fortune, and every circumstance that usually unfit men for scientific pursuits, especially for their practical details, if his lordship only encouraged these undertakings in others, he would merit our praise; but when we see him, without losing sight of the duties of his station in society, give up so much time, and expend so much money on those pursuits himself, and render not only his name illustrious, but his rank more honorable, we must feel sympathy in his successes, and rejoice that he has obtained from all quarters the highest and most flattering encomiums, and that he can now enjoy, in the use of his telescope, the well-earned fruits of his previous labors." To this I do not need to add a word, further than to say that I shall always look back with satisfaction to the view which I was allowed to enjoy of what are unquestionably among the greatest curiosities of the age, Lord Rosse's telescopes.

From Mary Howitt's Ballads.

THE FAIRIES OF THE CALDON LOW.

A MIDSUMMER LEGEND.

"And where have you been, my Mary,
And where have you been from me?"
"I've been to the top of the Caldon Low,
The midsummer-night to see!"

"And what did you see, my Mary,
All up on the Caldon Low?"
"I saw the glad sunshine come down,
And I saw the merry winds blow."

"And what did you hear, my Mary,
"All up on the Caldon Hill?"
"I heard the drops of the water made
And the ears of the green corn fill."

"Oh! tell me all, my Mary,
All, all that ever you know;
For you must have seen the fairies,
Last night, on the Caldon Low."

"Then take me on your knee, mother;
And listen, mother of mine:
A hundred fairies danced last night,
And the harpers they were nine.

"And their harp-strings rung so merrily
To their dancing feet so small;
But oh! the words of their talking
Were merrier far than all."

"And what were the words, my Mary,
That then you heard them say?"
"I'll tell you all, my mother;
But let me have my way.

"Some of them played with the water,
And rolled it down the hill;
'And this,' they said, 'shall speedily turn
The poor old miller's mill:

"'For there has been no water
Ever since the first of May;
And a busy man will the miller be
At dawning of the day.

"'Oh! the miller, how he will laugh
When he sees the mill-dam rise!
The jolly old miller, how he will laugh
Till the tears fill both his eyes!'

"And some they seized the little winds
That sounded over the hill;
And each put a horn unto his mouth,
And blew both loud and shrill:

"'And there,' they said, 'the merry winds go
Away from every horn;
And they shall clear the mildew dank
From the blind, old widow's corn.

"'Oh! the poor, blind widow,
Though she has been blind so long,
She 'll be blithe enough when the mildew 's gone,
And the corn stands tall and strong.'

"And some they brought the brown lint-seed,
And flung it down from the Low;
'And this,' they said, 'by the sunrise,
In the weaver's croft shall grow.

"'Oh! the poor, lame weaver,
How will he laugh outright,
When he sees his dwindling flax-field
All full of flowers by night!'

"And then outspoke a brownie,
With a long beard on his chin;
'I have spun up all the tow,' said he,
'And I want some more to spin.

"'I've spun a piece of hempen cloth,
And I want to spin another;
A little sheet for Mary's bed,
And an apron for her mother.'

"With that I could not help but laugh,
And I laughed out loud and free;
And then on the top of the Caldon Low
There was no one left but me.

"And all on the top of the Caldon Low
The mists were cold and grey,
And nothing I saw but the mossy stones
That round about me lay.

"But, coming down from the hill top,
I heard afar below,
How busy the jolly miller was,
And how the wheel did go.

"And I peeped into the widow's field,
And sure enough was seen
The yellow ears of the mildewed corn,
All standing stout and green.

"And down by the weaver's croft I stole,
To see if the flax were sprung;
But I met the weaver at his gate,
With the good news on his tongue.

"Now this is all I heard, mother,
And all that I did see;
So, pr'ythee make my bed, mother,
For I'm tired as I can be."

*T. Woods, M. D. "Account of the Telescopes of the Earl of Rosse." Shields and Son, Parsonstown. 1845.

From the People's Journal.

A RHYME FOR THE TIME.

Oh! ye have glorious duties to fulfil,
Nor faint, nor fear upon the weary way,
Ye who with earnest rectitude of will
Marshal the millions for the moral fray;
Ye who with volleyed speech and volant lay
'Gainst the dark crowd of social ills engage—
Lead us from out the darkness to the day
We languish to behold; exalt the age,
And write your names in fire on Truth's unspotted page!

With hopeful heart, and faith-uplifted brow,
Press on, Crusaders, for the goal is near!
Desert and danger are behind, and now
Sweet winds and waters murmur in our ear;
And plenteous signs of peaceful life appear,
And songs of solace greet us as we go,
And o'er the horizon's rim, not broad, but clear,
The light of a new morning seems to flow—
We journey sunwards, on! and hail the uprising glow!

In the sad wilderness we 've wandered long,
Thirsting amid the inhospitable sand,
Cheered by that burden of prophetic song,
"The clime, the time of Freedom is at hand."
And lo! upon the threshold of the land
We strive and hope, keep patient watch, and wait;
And few and feeble are the foes that stand
Between us and our guerdon.—Back, proud gate,
That opes into the realm of Freedom's high estate!

Not ours, perchance, the destiny to see
The unveiled glories of her inner bower;
But myriads following in our steps shall be
Equal partakers of the coming hour.
The unencumbered heritage, the dower,
With its full fruits, is theirs, with all its store
Of fine fruition and exalted power,
And Truth shall teach them her transcendent lore—
"Man towards the perfect good advanceth evermore!"

And in our upward progress through the past,
What giant evils have been trodden down!
Dread deeds which struck the shrinking soul aghast,
Branding the doer with unblest renown;
The inquisitor's harsh face, and gloomy gown,
Girt with a thousand torture-tools; the flame
In whose fierce folds the martyr won his crown,
Are gone into the darkness whence they came;—
There let them rust and rot, in God's insulted name!

Knowledge hath left the hermit's ruined cell,
The narrow convent, and the cloister's gloom,
With world-embracing wings to soar and dwell
'Mid purer ether, and sublimer room.
The volleyed lightnings of her press consume
The tyrant's strength, and strike the bigot blind;
Day after day, its thunders sound the doom
Of some old wrong, too hideous for the mind
Which reason hath illumed, which knowledge hath refined!

Knowledge hath dignified the sons of toil,
And taught them where pure pleasures may be won;
The peasant leaves his ploughshare in the soil
For mental pastime, when the day is done;
The swart-faced miner, shut from breeze and sun,
While nature reigns in beauty unsubdued—
Creeps from his caverned workshop, deep and dun,
And in his hovel's fire-lit solitude
Storeth his craving mind with not unwholesome food.

'Mid the harsh clangor of incessant wheels,
Beside the stithy and the furnace-blaze,
Some soul, still hungering and enlarging, feels
The silent impulse of her quickening rays;
In the lone loom-cell, where for weary days,
And weary nights, the shuttle flies amain,
With his white web, the weaver weaveth lays
To speed his labor, or beguile his pain:—
Lays which the world shall hear and murmur o'er again!

Proud halls reëcho with exalted song,
With wise instruction, or impassioned speech;—
And who outnumbers the heart-listening throng?
The artizan, who learns that he may teach;
Longing, acquiring, holding, like the leech,
He cries "Give, give!" with unallayed desire;
No point of knowledge seems beyond his reach;
Effort begets success, and higher, higher,
Like eagles towards the sun, his full-fledged thoughts aspire!

And by this patient gathering of thought,
And by this peaceful exercise of will,
What wonders have been nursed, matured, and wrought—
What other wonders will they *not* fulfil?
Upheaves the valley, yawns the opposing hill,
Man and his hand-work sweep triumphant through;
Time halts, space narrows, prejudice stands still
And dwindles in the distance; high and new
Are all our dreams and deeds—yet much remains to do.

But war, that tawdry yet terrific thing;
The Ethiop's brand and bondage; the vile show
Of God's frail image from the gallows string
Dangling, and heaving in convulsive throe.
These man-made ministers of death and woe,
Shall we not crush them. Reason, Mercy, say?
Shall we not fling behind us as we go
These ancient errors? Reason answers, "Yea:
Pure hearts and earnest souls will clear the encumbered way."

Thus the old idols crumble to the dust,
Their altars shattered, and their glory shorn,
Old sophistries, once taken upon trust
As Wisdom's spirit-words are grown outworn.
Another incubus, though newly born,
Dies of its own unholiness; a cry
Of simultaneous triumph mixed with scorn
Comes from the toil-bowed multitudes:—Ah why
Do soul-sent sounds like these ascend the placid sky?

"Farewell thou lawless law! thou death-in-life!
Thou labor-lowering bread-curse, and thou bane
Of God's blest bounty! thou remorseless knife
Held at the throat of Enterprise! thou stain
On Freedom's fairest page! thou gainless gain!
Thou nightmare of the nation! we awake
And fling thee off; thy many-folded chain
Consumeth like the lightning-kindled brake;
The far off shores clap hands, and all thy champions quake!"

Hail to the lofty minds, the truthful tongues,
Linked in an universal cause, as now,
Which break no rights, which advocate no wrongs,
Firm to the loom, and faithful to the plough!
Commerce, send out thy multifarious prow,
Laden with goodly things for every land;
Labor, uplift thy sorrow-shadowed brow,
Put forth thy strength of intellect and hand,
And plenty, peace, and joy may round thy homes expand.

Hail, mighty Science, nature's conquering lord!
Thou star-crowned, steam-winged, fiery-footed power!
Hail, gentle Arts, whose hues and forms afford
Refined enchantments for the tranquil hour!
Hail, tolerant teachers of the world, whose dower
Of spirit-wealth ourweighs the monarch's might!
Blest be your holy mission! may it shower
Blessings like rain, and bring by human right,
To all our hearts and hearths love, liberty, and light!

From the Quarterly Review.

Experimental Researches in Electricity. By Michael Faraday, Esq., D.C.L., F.R.S., &c. &c. From the Philosophical Transactions, Part I., for 1846.

Nineteenth Series—*On the Magnetization of Light, and the Illumination of Magnetic Lines of Force.*

Twentieth and Twenty-first Series—*On New Magnetic Actions, and on the Magnetic Condition of all Matter.*

We willingly invite the attention of our readers to the papers named at the head of this article—the most recent of a long series by the same author, which have largely contributed to support the ancient fame of the Philosophical Transactions. Connected and consecutive in their objects of research, these memoirs have few parallels in the history of science as regards the magnitude and interest of the result obtained. They illustrate alike the genius of the man, and the spirit and methods of experimental research at the present epoch. They deal with elements the most universal, yet the most mysterious, upon which the human intellect can employ itself in the way of experiment; with agents which, though operative in the greatest as in the most minute phenomena of the physical world, have only of late been distinctly recognized and submitted to such inquiry And they are the more remarkable in result, as not merely adding new facts and phenomena to our knowledge, but yet more, as fixing new relations and affinities among these great natural elements; in some cases establishing actual identity; in others, pointing at future discoveries, and marking the way thereto by anticipations only less remarkable than the truths to which they may hereafter conduct.

In noting these characters of the memoirs before us, and of those preceding them, we must not be understood to exclude or undervalue other philosophers who have labored successfully in the same great field of inquiry; and, as we shall see afterwards, have pushed experiment even among some of the very phenomena with which we are now concerned. Commencing with Œrsted, who may be said to have opened a new road into these fertile domains of science, we find the names of Ampère, Davy, Wollaston, Arago, Becquerel, Wheatstone, and many others, all deservedly eminent as laborers therein. If a question of superiority were to arise among these names, as respects the particular subject of research, that of Ampère might perhaps have best claim to it, in the importance and extensive application of the results obtained.

But we believe there can be no hesitation in assigning to Faraday the highest place as a laborer and discoverer in this department of science, including electricity and magnetism in their various forms and modes of action, in the mutual connections of these, and in their relations to the other great elements and agents of the physical world. No man has attained so much, or given such entire completeness of experimental proof to the truths attained. His researches, if equalled by some, are surpassed by none others that we know, as specimens of pure inductive inquiry. Conceived in the true spirit of philosophy, the objects are ever distinctly indicated, and pursued, step by step, with wonderful fertility and variety of experimental resource. All is so close, clear, and consecutive—the result of each experiment suggesting new questions and new methods of solving them—as to convey frequently the aspect of facility and simplicity where the objects are in reality the most abstruse and difficult to handle. *Questo facile, quanto è difficile!* is the expression of an Italian writer, applying well to the instance before us. It is one of the faculties of genius, as contrasted with dulness or imperfect knowledge, to simplify all that it discloses or creates.

The labors of Dr. Faraday, as is well known, have not been limited to this branch of science, though his fame is more especially associated with it. His published memoirs on other subjects, and his public lectures, are evidence of the extent of his researches. To his singular merits as a lecturer, the thousands who every year listen to him bear a living testimony. But we would confine ourselves, in speaking of him, to the view under which he will be recognized by posterity—as an ardent lover of philosophic truth, wholly free from the jealousies which too often deface and distort the search after it—as an acute and exact reasoner, yet with a buoyancy of imagination giving a certain poetical vigor to his conceptions—eminently ingenious in devising experiments to fulfil his ideas, and singularly skilful in executing them—as a writer on subjects of science, clear, candid, and judicious, and occasionally rising into eloquence from enthusiasm in the grandeur of his subject. Such, we are persuaded, will be the judgment pronounced by those who come hereafter, and in full accordance with contemporary opinion of his merits.

We have spoken of the researches before us as well illustrating the spirit and methods of science at the present period. This might be readily admitted as a general expression; but we wish to give it a more particular application to two points, distinct from each other, and on first aspect seemingly incongruous; yet capable of concurrence, and in their union evolving the highest results which science can afford. To these we are solicitous to draw the attention of our readers.

The first of them is, the tendency and effect of present research to pursue, by direct experiment, those more subtle elements and occult relations of the material world which heretofore have been chiefly the province of speculation and uncertain theory—the aspirations rather than the realities of science. The earlier experimentalists on light, heat, electricity, and the magnetic powers, penetrated partially indeed into these more obscure domains; and, as respects electricity more especially, even the dawning of our knowledge disclosed facts which could not but be received as the signals of future and more profound discovery. The electric stream brought down by Franklin from the thundercloud was in some sort a harbinger of the electric telegraph—that marvellous invention of the present day, by which human thought and intelligence are conveyed from place to place with a rapidity which human imagination cannot follow, and which human reckoning almost fails to express. In like manner, even the earliest researches as to light gave cause both to reason and fancy to look for ulterior results regarding this great and mysterious element, which, if not "telling its fountains," might yet disclose new properties and actions, and expound the nature of some of its mighty influences in the universe that surrounds us. And it is equally obvious that all such direction of science into the higher elements of the material world must, even from the outset, develope connexions amongst them, before unknown, or seen only through the dim light of analogy and conjecture.

While admitting, however, this constant and

natural progress of physical knowledge from simpler truths and relations to those more recondite and universal, we must still contend that the sudden and remarkable extension of these methods of research within the last forty years, their better definition as principles of inquiry, and the vast results and wider generalizations which have arisen from them, constitute a distinct era in the history of science which it is probable will be more clearly recognized hereafter than it is by ourselves. In this, as in other matters of literature as well as physics, the present time is so encumbered with details, and occupies so disproportionate a space in our minds, that it becomes difficult to detach and designate the great marks set upon our generation, or to affirm what will remain behind for the judgment or applause of posterity.

It would be interesting and instructive to note in detail those particular events in each science which fulfil the conditions we have stated, and mark in some sort to each the commencement and character of the present era. A few such notices we put down as illustrative to our readers of the general view, and not designing to fill up the crowded picture of this period. *Erigunm tempus, si computes annos; si vices rerum, ævum putes.*

Taking Chemistry, then, as our first instance, we may rightly date the commencement of this era in the great discovery of the law of definite proportions, mainly due to Dalton, extended and better defined by Wollaston, Berzelius, and succeeding chemists. The attainment of this law has changed the whole course and aspect of the science, and especially given new and enlarged basis to the doctrine of chemical affinities. It may be fitly viewed as one of the greatest inroads made by man into the recesses of nature; and the knowledge so gained has this further condition of grandeur—that it assumes a mathematical exactitude of proof, furnishes direct anticipation of results yet to be obtained, and methods the most perfectly fitted for obtaining them. The law of Isomorphism, due to Mitscherlich, and its modifications by Berzelius and Dumas, are corollaries from this higher principle, and related to it as all great truths are to one another. The late rapid progress of organic chemistry has been derived mainly from the same source; as also the recent doctrine of compound radicals, which, if it be not itself a permanent truth, is assuredly one of the happiest of intermediate devices for attaining such. In concurrence as to time with this discovery, and scarcely less important in their influence, are Davy's researches on the chemical agencies of electricity, disclosing a vast and fertile field of inquiry; affording new and more subtle methods of analysis, as speedily proved by the decomposition of the alkalis and earths; and, above all, interesting in the development of one of those great elementary relations to which we have alluded as characteristic of the present state of science, viz., the connexion between chemical actions and electric forces. We might further speak here of the ascertainment of the true nature of chlorine by the same eminent philosopher, and of the later discovery of iodine and bromine—elements which, from their presence in minute proportion in the waters of the ocean all over the globe, exemplify a principle largely developed in modern chemistry, viz., the effect of small quantities in composition. Other discoveries might be mentioned having the same general character; such as the singular class of phenomena depending on what has been called Catalysis—the reduction, by compression and cold, of various gases to the liquid or solid form, &c.; but the instances already given are enough to substantiate our statement of a period of rapid progress and higher generalizations throughout every part of chemical science.

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In Geology again, to carry our illustrations a step further, the doctrine of Hutton, so ably developed by Playfair, and the controversy which ensued between the partisans of the igneous and aqueous theories, gave a sudden stimulus to the science, though far inferior in degree and permanence to that derived from the labors, concurrent as to time, which have rendered the name of Cuvier illustrious to posterity. His discoveries in fossil remains, given to the world in the spirit of true philosophy, were the robust germ of a science which has since grown with unparalleled vigor, forming at this time one of the most wonderful attainments in the circle of human knowledge; inasmuch as it deals with conditions of change of organized life all over the earth—the extinction of old genera and species, and the creation of new—with periods of time, and changes of form in the solid crust of the globe, too great to be measured, save in that latest period when man first appears as a tenant of its surface;—yet, in the indications of order of succession, and general character of these revolutions, scarcely less perfect in evidence than those experimental sciences to which we lend our firmest belief.* Did our space allow of it, it would be easy to bring numerous instances from modern geology of this progress towards general laws; such as the doctrine of Elie de Beaumont, regarding the relative age of mountain chains—the determination of changes in the relative level of sea and land over the globe—of the influence of heat on mineral masses, both as respects internal structure and the position of strata—and of those phenomena of elevation and dislocation, to which even geometry has become in part auxiliary; enabling one of our first mathematicians to indicate, by general formulæ of expansive force acting under certain conditions, some of the actual results attained by the observations of the working geologist.

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the scope of this inquiry; multiplying and combining the objects of research so as to give it all the energy of a new branch of science; capable of larger generalization, and connecting itself with every other department of human knowledge. We might further speak of the various discoveries regarding Heat, as it comes to us in the solar ray—as it exists in planetary space—as it is present in the interior of the earth—and as it acts, or is acted upon by the various forms of matter, in reflexion, absorption, radiation, conduction, polarization, &c.;—researches begun by Black and Leslie; extended under high mathematical formulæ by Fourier; and by the elaborate experiments of Dulong, Melloni, and others, carried forwards to new and unexpected results. We might yet further allude to the Physiology of animal and vegetable life, where the attainments have been equally remarkable; bringing all sciences to bear upon vital phenomena—better defining the types of form and structural development—substituting cellular for vascular action in embryology and the formation of tissues—applying chemistry to objects, and through methods, heretofore untried—classifying anew the structure and functions of the nervous system—and from every side approaching nearer to that mysterious line which it will probably never be given to human power to traverse.*

But we think it hardly needful to go further, in proving the position we have laid down, or in marking by other instances that sudden and enlarged impulse of discovery which in each particular science, and about the same period, carried men forwards to inquiries more searching and profound than heretofore;—establishing at the same time relations and connexions throughout every part of the natural world, far more intimate and universal than had been surmised by the highest genius or most ardent imagination of former times. Thus, while the circle of physical knowledge has been rapidly and widely extending itself, the sciences and objects it embraces have been ever acquiring greater concentration and unity; pressing inwards to certain common principles and laws, the further development of which may be regarded as one of the highest purposes, and most legitimate rewards, of future inquiry.

The second great mark set upon science at the present day, is its *increased and still increasing exactness in all methods of research;* and as a necessary effect of this, the much greater precision and truth of all the results obtained. We may safely affirm that there is no branch of experimental science in which the results of any experiment made fifty years ago would now be received without repetition—no observation of natural objects, either by the eye or other instruments, made at that time, which has not been found to require revision. And we may equally affirm that the instances are exceedingly rare where such repetition and revision have not altered, more or less, the nature or amount of the results, often to so great an extent as to affect all the more material conclusions thence deduced. To the mathematical sciences of course this comment does not equally apply; but even here the greater exactness as to all facts and phenomena furnishes a much sounder basis for the processes employed.

What we have just stated will readily be recognized by men of science; but we are not aware that it has ever been put forward in such explicit form as the subject might well warrant. For an exposition of this kind, carried throughout all the physical sciences, would be exceedingly valuable as a part of the history of human knowledge; or even of the human mind itself, in those various conditions of change it has undergone in the progress of ages, and in the distribution of men over the countries of the earth. The topic, in fact, embraces the principles and application of *evidence*, as concerned in physical research;—a matter singularly curious and instructive in its history; and like every other part of the law of evidence, as received and applied in the affairs of mankind, furnishing a sort of index to the intellectual state of any given age or country.

For the disparity which manifestly exists in different minds in the perception of what are the proofs of truth, exists also in nations and communities of men;—a fact variously attested to us, and in no example more distinctly than in the history of physical science, whether speculative or experimental. Much curious illustration might be given from the writings of Greek and Roman philosophers, as well as from the more familiar sources which make known to us the opinions and superstitions of their times. Some men, indeed, like Archimedes, stand apart from, and above all rule. But as a general fact, we find, even in the best periods of antiquity, a singular want of all just perception of evidence in the observation of natural phenomena, strikingly contrasted with the urgent requisition for it in our own time—how far, in the case of the Greeks, owing to their peculiar vein of scholastic philosophy, to the influence of language, or other causes, we cannot now stop to inquire.* During the intermediate ages, down to the very time of Bacon, little improvement occurred, or was to be expected under the circumstances concurring to prevent it. The subsequent progress, though slow perhaps, yet has been determinate and uninterrupted down to the period of which we are now treating. Since this time the change, as to all that concerns the exactness and strict demonstration of science, has been such in amount, and so rapid, as to justify the same brief illustration of this second characteristic mark of modern science which we have already given to the former. And to this we now proceed.

Recurring first, then, to Chemistry—how wonderful is the difference between an analysis of the time of Bergman and Fourcroy, and one of the present day coming from the hands of Berzelius, Mitscherlich, or Liebig! The chemist is now bound to render back as the weight of the constituent parts, be

* In the application of chemistry to physiology, the principle we think likely to be most fertile is one recently developed and applied by Liebig and others, that, viz., based on the fact that certain matters, even in the minutest quantity, do, in the act of combination or decomposition, bring other and far larger masses with which they come in contact into the same state, provided the atoms of the second are *capable of the same kind of change* as those of the first. The wide application of this principle to fermentation and to the action of different substances on the blood and organized tissues, will at once be seen. If fully sanctioned by further experiment, it will rank among the many general laws which are now gathering around a common centre.

* Hippocrates, one of the most sagacious and accurate observers of antiquity, has perhaps indicated the main cause; —*Δυο γάρ, επιστήμη τε καὶ δόξα· ὧν τὸ μὲν επιστασθαι ποιεῖ· τὸ δέ, αγνοειν.* The δόξα of the Greek schools was eminently unfavorable to exact knowledge during the period in question, as well as during still later ages in the history of the world.

An ample and interesting discussion of this topic will be found in the first volume of Dr. Whewell's "History of the Inductive Sciences," of which we are glad to see that a new and revised edition has just appeared.

they solid or gaseous, what he receives as the weight of the whole. In the analysis of any given compound, instead of a rude per centage of ingredients, with a large amount set down under the head of *loss*, he fixes the relative proportions with an exactness which is at once aided and attested by the great law of definite proportions, giving a mathematical character to the result. While what was once vaguely recorded as loss, is now made to yield its contents; including, as often happens, minute fractional quantities of substances, heretofore unknown, yet essential, it may be, to the nature and integrity of the compound. The actual state of analysis, as applied to organic matters, is the most recent triumph, as well as the best example of the case we are stating—an application still in progress, evolving every day new methods and higher refinements, and leading us nearer, not indeed to the nature of vitality, but to the power and processes through which it operates in the world around us. Physiology, aided by these new chemical resources, and by the increased power and delicacy of the microscope, is not merely enlarging its boundary, as already shown, but attaining at the same time an exactitude of results—far short, doubtless, of future knowledge—yet much greater than any hitherto possessed.

Let us take Meteorology as another example—a part of our knowledge still very imperfect, from the number of elements conjointly concerned, and the complexity of all the phenomena, yet how entirely altered from its state forty years ago! With instruments far more perfect, and at innumerable stations over the face of the globe, the most minute and authentic registers are now kept of the weight, temperature, and humidity of the atmosphere—of its electrical and magnetic conditions—of the direction, velocity, and duration of winds—of the quantity of rain falling—and of the meteoric phenomena which more irregularly affect our planet, either from causes proper to itself, or from external agents in its orbital passage through space.* It is in this part of science that the system of averages is chiefly instrumental in furnishing results. The number and precision of observations become therefore of the highest consequence; and no one can duly appreciate the progress as to these points who has not compared the tables now constructed, with the vague and limited registers of weather which once formed our sole meteorological knowledge.

The same remark applies to Physical Geography at large. In the early part of the century it had scarcely become a branch of knowledge. Now, as we have before stated, it ramifies itself through all; its objects enlarged and defined; its results, whether relating to surface, climate, productions, or other physical phenomena of the globe, increasing every day in number and exactness. We have already spoken of the great influence Humboldt has had in this department of inquiry. The strong vein of his talent, as of his actual labors, lies in this direction. A happy instance of it may be found in one of his more recent memoirs on the mean height of continents, and their centre of gravity, as influenced by mountain masses and chains. His other writings, and particularly his latest work, the Cosmos, abound in similar illustrations, all expressing a state of knowledge more special, exact, and minute.

In connection with the same general view, we may mention the pendulum observations of Sabine—the records of terrestrial magnetism, as derived from observations in every part of the globe—and the recent researches of Whewell and Lubbock on the tides, as examples of the ever-growing demand for exactness of results, obtained by more perfect instruments, and from averages of greater numerical value.

Of the rapid extension of knowledge, depending greatly on increased exactness of research, Zoology furnishes a striking example. The new classification of the animal kingdom by Cuvier gave at once fresh stimulus to discovery, and a better basis on which to repose it. Such have been the zeal and enterprise of naturalists—favored, indeed, by facilities of travel before unknown—that within the last twenty years the number of distinct species, collected and classified, has been nearly doubled in every class. We might particularize the ratio of increase of each, but will merely state, as instances, that the mammalia, numbered in 1828 by Cuvier and Desmarest at 700, now reach nearly 1200—the fishes, estimated somewhat earlier by Lacépède at 2000, are now increased to about 8000—while the insects, calculated by Humboldt, in 1821, at 44,000, have at this time reached the amount of more than 100,000 collected species! A profuse variety in the forms of animal life, scarcely less confounding to the imagination than are the numbers by which we measure the heavens, or record the velocity and vibrations of light. We might draw from the progress of Botany instances not less remarkable, did our limits allow of such detail.

In Geology we find the expression of a similar and equal change, principally due to palæontology, as a part of the subject. The study of fossil remains, to which we have already alluded as one of the greatest steps of modern science, has removed endless ambiguities and errors in the theory and classification of rocks. Connexion or identity, as to age and relative position, can be determined by this means for strata in remote parts of the world, even where all other marks of external resemblance are wanting. The recent recognition and classification of the Silurian system by Murchison, an important step in geology, is derived chiefly from this source; and equally so the division of the tertiary formations proposed by Lyell—provisional, it may be, but founded on a rational basis, and rendering all future observations more easy and precise. A good economical example to our purpose may be found in the present exact knowledge of the carboniferous system, precluding hereafter any ignorant and expensive search after coal where none worth working can be found.

And, again, in the manner of studying these fossil remains, how striking are the proofs of increasing accuracy as to facts! Half a century ago huge bones were dug out of the alluvion; the forms of reptiles, fishes, and shells hewn out of solid rocks; gigantic ferns and other tropical plants found among the coal strata, with little notice or name given to these appearances. Now the classification of the fossil world is well nigh as complete and exact as that of existing life. The fossil species, animal and vegetable, discovered and classed, amount to nearly 10,000; and the additions continually

* This point, of the extraneous influence the surface of the earth may undergo during its progress through space, has scarcely, we think, obtained due notice—a matter, doubtless, in great degree speculative at present, yet rendered more probable by recent observation, (we allude especially to the periodical meteoric appearances of August and November,) admitting of future evidence from several sources, and if hereafter proved, making it likely that many phenomena of meteorology, as well as of climate and season, may be thus explained.

made to this number not merely tend to complete the series of these remains of former conditions of the earth, but often even fill up the *lacunæ* or gaps in the forms of animal life around us. The memoir of Owen on British Fossil Marine Reptiles is a striking example of what has been done in a single subdivision of the subject. The results obtained by this eminent naturalist from microscopic examination of the internal structure of teeth, are further curiously illustrative of that strictness and minuteness of research which have been extended to every part of comparative anatomy, as well of fossils as of existing animal life. And yet more remarkable in this light are the discoveries of Ehrenberg among the fossil infusoria, showing conditions and changes of animal life before unknown; and the production from the siliceous or calcareous coverings of those microscopic beings, of aggregate masses of some of the hardest rocks forming the crust of the globe.

In Astronomy again, though exact observation began earlier than in other sciences, and, aided by the powers of the higher mathematics, attained wonderful results, yet have they been greatly extended and rectified by the more powerful and perfect instruments of the present time. The working astronomer has been sedulous in discovering causes of instrumental disturbance; and providing against them by artifices of precaution, which would seem almost to have reached their maximum of refinement. The great achromatic glasses of Munich (why not of London also?) by their signal excellence have given a power of penetration into space, to which we owe some of the finest discoveries. While the gigantic reflector of Lord Rosse, fashioned in its details with the delicacy of a microscope, has never yet been directed to the heavens without disclosing some new fact or correcting some prior observation. *Cœli munimenta perrupit.* To this great perfection of instruments are due such observations as those which have recently determined the parallax of certain fixed stars—the proper motions of others, including our own sun and his system—the periods of revolution of double stars—the existence and perturbations of the five telescopic planets between Mars and Jupiter—and, as a rare example of refined research, the perturbation of the mean motions of the earth and Venus, from the inequality of their periodic times, discovered by the astronomer royal, though not exceeding a few seconds in amount.

There is no part of physical science, in fact, in which observation or experiment are concerned, where the same progress in perfection of instruments has not occurred. Space, time, force, motion and weight, however expressed in the phenomena of nature, are all determined with far greater precision; and sources of error recognized and removed which heretofore were unknown or disregarded. When even the simple spirit-level has undergone various improvements in our hands, it may well be understood that the microscope, the pendulum, the instruments for measuring terrestrial magnetism, for analyzing the subtle and complex phenomena of light and electricity, and for indicating the several conditions of the atmosphere, have been the subject of still greater change and improvement. And not merely this, but the progress of discovery itself, and the larger and more direct application of science to arts and manufactures, have placed in our hands instruments altogether new, and capable of attaining new classes of results. We may cite, as a remarkable case in point, the thermo-electric pile, which Melloni and Forbes have made a means of measuring degrees of heat hitherto inappreciable; and of determining other properties of this great element before unknown; and which, in their approximation to the phenomena of light, become of high interest to philosophy. We will mention another signal instance. Though astronomy, through the transits of Jupiter's satellites, had shown the velocity of light, what but the exact resources of modern science, vesting themselves in the most ingenious combinations, could have enabled Wheatstone to assign a comparative measure of speed to the electrical current, designating thereby those enormous velocities of which the electric telegraph is at once the exponent and the practical application.

In alluding to the connexion of physical knowledge with the arts of life, we cannot pass over the steam engine in its various forms, as the transcendent instance of what has been attained in the perfection and practical uses of machinery. At first a comparatively rude and powerless application of a natural agent, it has now, by a consummate adaptation of parts, and the removal of all that can impair or disturb its action, become the most powerful, as well as most certain and controllable minister of man—carrying him at the speed of fifty miles an hour along his railways—stemming the wildest storms of the Atlantic—draining the deepest mines, and converting the great Lake of Haarlem to dry land—or giving continuous and orderly motion to the complex myriads of wheels which perform the work of a Manchester cotton-mill. Familiar as these things now are to our daily view, they would have served as material for the fairy tales of our forefathers. And in every point they singularly exemplify what we are now describing, viz., the great power which man has gained over the natural world and its most uncontrollable elements, by the variety of combinations and exactness of methods which are characteristic of modern science.

We have dwelt much longer than we intended on these two topics. But we think the digression will be justified to our readers by their intrinsic interest, as describing very remarkable changes in the extent and state of physical knowledge and in the intellectual history of man; and yet further, by their more particular relation to the researches before us. Linked together, as all the physical sciences are, by a chain of common truths, which is ever gathering more closely around them, yet is electricity foremost perhaps in its intimate connexion with all—absorbing some, as we have seen—expounding others—and developing actions and principles which from their universality give certain promise of disclosing other relations yet unknown and unsuspected. What results, for instance, may we not fairly anticipate from the principle of polarity, supplied as a basis of future inquiry to the different forms of matter and action around us!—a principle first brought into clear light by what may now be termed the electric currents of the magnet—developed in every other part of electrical research—and now extended, under modifications which do not exclude the notion of unity of source, to the elements of light and heat, and to endless conditions and combinations of matter over the globe. All that belongs to chemical affinities, and to the phenomena of attraction and repulsion, will probably in the end merge in some common expression of this nature. And if future inquiry should resolve into a truth the theory of Æpinus, extended and vindicated by the higher mathematics of Mosotti, that gravitation itself is but a residual force—a balance of attractive

power arising out of definite atomical actions of attraction and repulsion among the molecules of matter and the electric element, severally and mutually—then do we at once extend the same principle throughout all known space—the highest attainment, it may be, and ultimate limit of our knowledge of the natural world.*

The paths through which such high attainments may be made are in some points obvious, in others still hidden or obscure. The discoveries we are about to describe form undoubtedly one great step in advance; and that they are so regarded by Dr. Faraday himself is obvious from his statement of the views which conducted him more directly to the inquiry:—

"I have long held an opinion, almost amounting to conviction, in common, I believe, with many other lovers of natural knowledge, that the various forms under which the forces of matter are made manifest have one common origin; or, in other words, are so directly related and mutually dependent, that they are convertible, as it were, into one another, and possess equivalents of power in their action. In modern times the proofs of their convertibility have been accumulated to a very considerable extent, and a commencement made of the determination of their equivalent forces. This strong persuasion extended to the powers of light; and led on a former occasion to many exertions, having for their object the discovery of the direct relations of light and electricity, and their mutual action in bodies subject jointly to their power, but the results were negative. These ineffectual exertions, and many others never published, could not remove my strong persuasion, derived from philosophical considerations; and therefore I recently resumed the inquiry by experiment in a most strict and searching manner, and have at last succeeded in *magnetizing and electrifying a ray of light, and in illuminating a magnetic line of force.*"

The passage we have quoted forms an introduction to the first of these memoirs, and indicates thus far the nature of the discoveries which are its subject. The two succeeding papers record another class of very important phenomena, depending on the same element of power, but so far distinct in character that they might have been discovered altogether independently of the former. We shall take the subjects in the order adopted by our author; seeking in each case to simplify our statement of them as much as possible, both for brevity's sake, and, yet more, to render the description intelligible to those of our readers who may not be familiar with the facts and phraseology of this part of science.

The first paper is entitled "On the Magnetization of Light, and the Illumination of Magnetic Lines of Force." We think there is room for question as to the fitness of this title; and, though vindicated by an able note, it seems doubtful whether Dr. Faraday himself is wholly satisfied on the subject. We are led to infer from several passages in the paper, that subsequently to the date of the discovery some modification occurred in his views as to the precise nature of the actions concerned; a point to which we shall again refer when speaking of the theory of the phenomenon. We will merely say, meanwhile, that we consider the question of little moment where the results are so real and important under any mode of designating them.

We must not, however, regard the relation of light and magnetism as entirely a new subject, or for the first time submitted to experiment. More than thirty years ago, Morichini of Rome, and at a later time Mrs. Somerville, made observations which seemed to indicate an action of the violet rays of the spectrum in magnetizing needles exposed to their influence. The uncertainty or failure of these experiments in the hands of others threw doubt upon them; but the inquiry was revived in another form by Mr. Christie, whose valuable observations, recorded in the Philosophical Transactions for 1826 and 1828, show that the magnetized needle, exposed to the sun's rays, has its arcs of vibration lessened, so as to come to rest sooner than it would otherwise do. Another paper, about the same time, by Mr. Mark Watt, relates other experiments of more ambiguous kind, made with what he calls a Solar Compass; but the inquiry languished, and was fruitless of any certain results until the date of the present discovery.

The fact discovered, taking the most simple and concise expression of it, amounts to this—that a ray of polarized light, transmitted through certain transparent substances placed in the line of force or action connecting the opposite poles of an electric magnet, is so affected by this power, that it becomes visible or invisible, according as the current is flowing or not at the moment; this influence being more complete as the ray of light is more exactly parallel to the line of magnetic force; ceasing, if perpendicular to it. The changes thus produced are instantaneous, certain, and capable of being repeated as rapidly as the current can be suspended or renewed. We omit for the moment one important part of the phenomenon, which will be better understood when we have made more explicit what has been thus briefly stated.

First, then, with regard to the several elements concerned in this action; viz., the polarized light—the magnetic or electro-magnetic force—and the diamagnetic, as the body has been termed, through which this force passes in producing its effects.

To those of our readers who are not familiar with the phenomena of polarized light, a short explanation may be needful for the understanding of the facts before us. A ray of light, under ordinary circumstances, when reflected from any surface, is capable of being reflected again from another surface, or of passing directly through any transparent substance. But let this ray of light be submitted to a single reflection at one particular angle, varying somewhat in different substances—or to certain conditions of refraction, depending on the nature of the body through which it is transmitted—and it becomes polarized; or has undergone a change which renders it incapable of being again reflected, except at particular angles; or of being transmitted through transparent bodies, except in particular positions or directions. This phenomenon, now justly accounted one of the most important in optical science, may better be understood in the form of experiment than by any description, especially when following it through the various

*In reviewing these higher parts and passages of modern science, we are half tempted to desire some Lucretius, who might wrap in verse, immortal as his, matters which engage the imagination not less forcibly than they do the reason. Those of our readers who are happily familiar with this greatest of the Latin poets, will almost imagine the lines in which he would have invested these doctrines of polarity, definite proportions, and molecular changes, (the *primordia rerum* μιγαδες αδιαιρετα,) which enter so largely into the science of the present day, while curiously approximating in many points to the reveries of ancient philosophy.

and beautiful deductions to which the discovery has led. It is difficult to characterize by words, or even to follow in idea, the change the light has undergone in this process, though various attempts have been made to assist in the conception of it, under each hypothesis as to the nature of light, and especially in connexion with the theory of undulation. All we are at present concerned with, however, is the simple fact, and its relation to the magnetic power.

Next, then, as to this power, or current, or line of force; for the state of our knowledge still requires these ambiguous terms with respect to the element which is the source of action in these phenomena. The line in which such action exists is that, whether straight or curved, which connects the two opposite poles of any magnetic arrangement—completing that circuit of the magnetic or electric power, the interruption or renewal of which, with the effects on bodies made to intervene, or placed in certain relation of proximity to it, are mainly the foundation of all the phenomena in this branch of science, complex though they be, and rendered more so by the imperfect nomenclature applied to them. Other definitions might be given, even more general and inclusive; but we believe this to be well adapted to the understanding of the subject, as well as to just views in electrical science at large. It must be kept in mind, however, while using the terms *magnetic* and *electric* indifferently, as expressing power derived from a common source, that this power varies in effects according to its manner of action or distribution; so that while under one condition we have the phenomena of induction and electrolization arising from electric forces, in another we have the same power so acting as to produce magnetic phenomena, including those of which we are now treating—the two classes of results being only partially convertible into one another.

The magnetic arrangement employed by Dr. Faraday in these experiments was for the most part the electro-magnet. This beautiful and powerful instrument, depending on the principle of electrical induction, is formed by coiling copper-wire, covered with silk, round a thick cylinder of soft iron, and transmitting the voltaic current—that is, electricity from a voltaic battery—through the series of coils; thereby instantaneously converting the soft iron into a magnet, the power of which bears a certain ratio to the number of coils and the intensity of the current. A magnet has been thus made capable of sustaining a ton weight; and this enormous power, created in a moment by the completion of the electric circuit through the coils, is as suddenly annihilated by its interruption—one of the most miraculous attainments of science, in its dealing with the great physical agents around us. The command thus given to the operator of changing at any moment the condition of the experiment, by suspension or renewal of the acting power, is manifestly of the highest importance. The electro-magnet chiefly used by Dr. Faraday was one of the horse-shoe form, as more convenient for the purposes of experiment. Its power was that of sustaining from 28 lbs. to 56 lbs.; any below this not affording the same clear or certain results.

The third agent, if so we may term it, concerned in this discovery is the *diamagnetic*, or substance through which the polarized light and magnetic force are made to pass, to obtain the effects in question. Many bodies, as we shall hereafter see, are capable of rendering these effects; but none, yet tried, so completely or advantageously as a kind of heavy glass, made and described by Faraday himself seventeen years ago, under the name of the silicated borate of lead. A portion of this glass formed the diamagnetic through which the discovery of the relation between light and magnetism was first made, and the same substance continued to furnish the best experimental results during the inquiry.

Having thus noted the three elements concerned, we proceed to the action itself, and its manner of demonstration, taking Dr. Faraday's own description as the best that can be given:—

"A ray of light issuing from an argand lamp was polarized in a horizontal plane by reflection from glass, and the polarized ray passed through a Nichol's eye-piece, revolving on a horizontal axis, so as to be easily examined by the latter. Between the polarizing mirror and the eye-piece two powerful electro-magnetic poles were arranged, separated from each other about two inches in the direction of the ray, and so placed that if on the same side of the polarized ray it might pass near them, or if on contrary sides it might go between them—its direction being always parallel, or nearly so, to the magnetic lines of force: any transparent substance, therefore, placed between the two poles would have, passing through it, both the polarized ray and the magnetic lines of force at the same time and in the same direction.

"A piece of the heavy glass, about two inches square and half an inch thick, having flat and polished edges, was placed as a *diamagnetic* between the poles, (not yet magnetized by the electric current,) so that the polarized ray should pass through its length. The glass acted as air, water, or any indifferent substance would do; and if the eye-glass were previously turned into such a position that the polarized ray was extinguished, or rather, the image produced by it rendered invisible, then the introduction of this glass made no alteration in that respect. In this state of circumstances, the force of the electro-magnet was developed, by sending an electric current through its coils, and immediately the image of the light became visible, and continued so as long as the arrangement continued magnetic. On stopping the electric current, and so causing the magnetic force to cease, the light instantly disappeared; and these phenomena could be renewed at pleasure, at any instant of time, showing a perfect dependence of cause and effect."

To the phenomenon thus described, other important conditions, already referred to, were speedily added. The progress of experiment showed the character of the force thus impressed to be that of *rotation;* for when the ray of polarized light had thus been rendered visible, revolution of the eye-piece to a certain point, right or left, caused its extinction; while its yet further motion to one side or other reproduced the light, and with complementary tints, according as this further motion was to the right or left hand. And the law here, as determined by Dr. Faraday, is thus explicitly stated:—

"Magnetic lines, then, in passing through silicated borate of lead, (the heavy glass,) and a great number of other substances, cause these bodies to act upon a polarized ray of light when the lines are parallel to the ray, or in proportion as they are parallel to it;—if they are perpendicular to the ray, they have no action upon it. They give the diamagnetic the power of rotating the ray; and the *law* of this action on light is, that if a magnetic line

of force be *going from* a N. pole, *or coming from* a S. pole, along the path of a polarized ray coming to the observer, it will rotate that ray to the right hand; or, that if such a line of force be coming from a N. pole, or going from a S. pole, it will rotate such a ray to the left hand."

The discovery of these great facts led Dr. Faraday to the variations of experiment best calculated to define and illustrate them. Certain of these variations regarded the manner of generating and applying the magnetic or electric force. That the diamagnetic glass, placed between the contrary poles of two cylinder electro-magnets, should produce the same action as when between the poles of a horse-shoe magnet, might have been presumed; but not equally so, that it should give the same results with the ray of polarized light, by the action of a common steel horse-shoe magnet, without any electric current being employed. Such, however, was the case as to the nature of the effects, though they were feebler in degree—thus giving new attestation, if any were required, of the identity of the magnetic and electric forces. A further proof of this was furnished by other and very interesting variations of experiment, in which the action of electric currents alone was employed, apart from any magnetic arrangement. Helices, or concentric spirals of copper-wire, of various length and thickness, were used in these experiments; the diamagnetic being introduced within the spiral of the helix—if a liquid, enclosed in glass tubes. A ray of polarized light transmitted through the diamagnetic so placed, and made to disappear by turning the eye-glass, was instantly brought into sight again on the electric current being sent through the coils of the helix—disappearing as instantaneously when the current was stopped. These effects were invariable, however frequent and rapid the changes which produced them. And the progress of the experiments elicited this further important fact, that the rotation impressed upon the ray of light was to one side or the other, according as the electric current was sent through the helix in one or other direction of its length. It is not easy to describe the phenomena of rotation without some visible aid; but the general law obtained here may be thus expressed: "that when an electric current passes round a ray of polarized light in a plane perpendicular to the ray, it causes the ray to revolve on its axis, as long as it is under the influence of the current, in the *same direction* as that in which the current is passing."

There is great beauty, as Dr. Faraday justly remarks, in the simplicity of this law; and it is no less striking from its identity with that given before expressing the action of magnetism on light. Confirmations of this elementary unity of the electric and magnetic forces thus come in from every side; rendered more remarkable here by that association with the phenomena of light which points at relations hitherto unknown, and of the deepest import to future science.

Another series of these experiments regarded the relative power of different substances, and as diamagnetics, in producing these effects. First, it was found that bodies very remote from each other in chemical, physical, and mechanical properties—solids and liquids, acids and alkalies, oils, water, alcohol, ether—possess in one degree or other the power in question, the action being of the same kind, *viz.*, a rotative influence over a ray of light. Flint and crown glass have the property, but much more feebly than the heavy glass. Crystalline bodies, as a class, seem to resist the assumption of this rotating state. Though water possesses the power, pure ice apparently does not. Quartz, Iceland spar, and gypsum are without effect on the ray of light—rock-salt and fluor-spar give slight indications of it. All aqueous solutions possess the property—this uniformity of result making it probable that the water is chiefly concerned in the result. With air and other gaseous bodies, though tried in various forms, the experiments always gave negative results. In examining the many substances which have naturally a rotative force upon light, such for example as oil of turpentine, it was found that the superinduced magnetic rotation was according to the general law before stated, irrespectively of the natural rotation, except in adding to, or deducting from, its amount, as the direction may be. The illustration of this point is, perhaps, somewhat less lucid than Dr. Faraday's expositions usually are, and its understanding requires comparison of different clauses in his paper.

Another class of experiments, briefly recorded, embraces various combinations of the polarized ray with magnetic and electric forces, under circumstances of position and direction other than those which produce the phenomena already described, and with various substances, liquid and solid. As these experiments yielded only negative results, we do not think it needful to particularize them; though we would remark that such results are often as important to a train of research as those of more positive kind. Both are the records of natural facts, and mutually illustrative of the subject to which they pertain.

The latter part of this paper contains general observations on the phenomena described; and these possess all the interest which belongs to speculation on the higher elements of the material world, in their operation as causes, and in their mutual relations. The genius of our author is not less remarkable here than in the conception and conduct of the experiments which form the basis of such speculation; yet we are led to think that he has incurred some slight embarrassment from the title of his paper before alluded to; and principally as respects the proximate cause of the phenomena. The subject in truth is one where it is difficult to mould language to the theory of the abstruse actions concerned; and terms and ideas, almost metaphysical in kind, begin to blend themselves with the more exact realities of science.

The important question is obviously that which regards the manner of action of the magnetic or electric force upon polarized light—the mode in which one becomes the cause of change in the other. A ray of light is passing under certain conditions through a piece of glass—an electric current is made to flow in parallel lines through the same medium—the transmission of the light is instantly affected, so that it appears, or disappears, according as the electric current is passing or is suspended. Is this remarkable change the result of a direct action of electricity or magnetic force (we still use the terms synonymously) upon light? or is it due, principally or solely, to the intervention of the material particles of the body through which this force and the ray are simultaneously passing? This is probably the most distinct form in which the question can be propounded, though, as we shall presently see, it has been somewhat modified in solution by Dr. Faraday himself.

The earlier impressions regarding the discovery undoubtedly leant to the former opinion, *viz.*, that

the terms *axial* and *equatorial*—the former indicating the direction from pole to pole along the line of magnetic force—the latter the direction perpendicular to this, and across the same line. These terms, which are likely to become permanent, we may employ without further explanation, as expressing this important distinction.

The manner of suspension between the poles differed in some degree with the substances to be experimented upon; but was generally effected by a fine thread of cocoon silk, with a sort of cradle or stirrup at its lower end to support the substance. Care is required (using the test of attraction by the pole of the magnet) that these supports contain no magnetic material, and the same precaution must be employed as to the substances experimented upon; otherwise the results are more or less impaired.

The first substance brought to trial was the bar of heavy glass used in the experiments on polarized light; and we may state these results in some detail as illustrative of the whole class of phenomena. The bar of glass being suspended between the magnetic poles, the magnetic power was given by the influx of the electric current. It instantly began to move, turning round its point of suspension into a position *across* the magnetic line of force, and after a few vibrations rested there; returning again to this equatorial position, if displaced by the hand. Either end of the bar went indifferently to either side of the axial line, the determining circumstance being simply its inclination either one way or the other at the beginning of the experiment. Or, if the point of suspension be not equidistant from the poles, the same equatorial position results, with the further effect that the centre of gravity of the bar recedes from the pole, and remains repelled from it as long as the magnetic power is passing. There are two positions of equilibrium for the bar—one stable, where it is originally in the equatorial position, and retained there without change by the magnetic force—the other where the bar is equi-distant from the poles, and in the exact axial line, but this position unstable, as the least deviation from it causes an entire change into the equatorial line. Placing the point of suspension equidistant from the poles, but removing it a little on one side or other of the axial line, then the bar points as before across the magnetic line of force, while at the same time receding still further from the axial line, and retaining this position as long as the magnetic force is passing. Instead of two magnetic poles, a single pole of an electro-magnet may be used either in vertical or horizontal position, and with effects in perfect accordance with those already described. Further we may add, that the same effects were obtained when the bar of glass was immersed in water, alcohol, or ether.

To produce the result of pointing across the magnetic line, it is necessary that the bar of glass be of elongated form. Cubes or rounded fragments will not point, except if brought into one close line of suspension, when the effect takes place. But these spherical pieces, or fragments of any form, are repelled from either pole; or if suspended in the equatorial line, on either side of the axis, recede from it further on that side; thus presenting the effects of repulsion and recession under the simplest and most general aspect, as a key to the other phenomena.

It is, indeed, from these latter results that we derive the most certain proof as to the nature of the actions described. The assumption of the equatorial position by the elongated bar is in fact only a more complicated result of the state and actions of the particles composing it; each particle being repelled from the poles and magnetic axis, and tending to move outwards, or into the positions of weakest magnetic action; and their conjoint effect being that of bringing the mass into the position shown by experiment. A right conception of this point is essential to all clear understanding of the subject. The whole phenomenon, reduced to its most simple form, is that of magnetic repulsion; applied to innumerable kinds of matter, and separate from any proper polarity, inasmuch as either magnetic pole will repel, and both repel at once. This, then, may be termed a magnetic property, new to our knowledge; and distinguishing the great mass of terrestrial substances, by a positive instead of merely a negative character, from those particular bodies hitherto called magnetic.

The foregoing details, if we have succeeded in rendering them clear, will enable our readers to follow the shorter summary, into which we must now contract the numerous experiments and results recorded in this paper. From his observations with the heavy glass, Dr. Faraday proceeded to other kinds of glass, to phosphorus, sulphur, quartz, calcareous spar, and other crystals. Finding them all obedient to the same law, he went on to take bodies indifferently from every class, and of every kind—solid and fluid, crystalline and amorphous—in mass, or reduced to the finest powder. With the sole, but important, exceptions of the magnetic metals, and air and other gaseous bodies—the former having an opposite function, the latter indifferent to both—he found the influence and the general law to be the same for all. A catalogue is annexed of nearly sixty substances, taken from the much greater number experimented upon; among which we find water, alcohol, sugar, caoutchouc, wood, ivory, mutton, beef, blood, apple, bread, &c. We ourselves have often seen (and the sight is a strange one, even when expected) a slice of meat or apple, placed between the magnetic poles, begin to move the instant the magnetic force was made to circulate, and end by fixing itself in the equatorial position before described. Could we in similar manner suspend a man in the magnetic field, he too would doubtless point equatorially, as all the substances composing his body possess this property.

The distinction of the metals, as belonging respectively to the two classes of magnetics and diamagnetics, (for the term *non-magnetic* is now less apt for use,) is a very interesting one; and Dr. Faraday has largely illustrated it by experiment. It is the distinction between a specific attraction, under conditions of polar duality, and a simple repulsive influence by the same agency. The magnetic metals have been named as ten in number, iron being much the most remarkable amongst them. Sixteen other metals, carefully examined, were found to be diamagnetic, or governed by the new magnetic power. Bismuth and antimony manifest this property in high degree, and especially the former; a small bar of which, two inches long, was used in various experiments, and from its great sensibility afforded many remarkable and some rather complicated results. These, however, were all reduced under the general law, and equally so in their termination a series of experiments with copper bars, which presented in the outset some singular anomalies of motion, requiring much skill and prior knowledge for their solution. These phenomena are due to the high electro-conducting

power of copper, permitting the formation of currents in it by inductive forces; and their perfect accordance with the earlier discoveries of Faraday and other eminent philosophers on this subject, is a striking attestation of the unity and integrity of modern science.

To ensure exactness of results in experimenting on the metals, it was necessary to be assured that they contained no alloy of iron or other magnetic metal; or that if these were present, due allowance should be made for such admixture—and the same with respect to other substances operated upon. Blood and the muscular fibre, for example, though subject to the new law, would probably be more energetically so but for the iron they contain in composition, which must in a certain degree modify the action. The properties of magnetic and diamagnetic bodies being in fact opposed as to their dynamic effects, it was to be inferred that a due mixture of matters of each class would afford a substance either neutral or in some intermediate condition; and this inference was strikingly verified by experiment. The protosulphate of iron being magnetic, and water diamagnetic, a solution of the iron in the water gave either a neutral state, or an inclination to axial or equatorial action, according as the solution was made stronger or weaker in the proportion of iron. With the exception of substances obtained by such admixture, no single solid or fluid body has yet been found that is perfectly neutral as to the two conditions of magnetic influence.

In connexion with this subject Dr. Faraday gives a list of magnetics and diamagnetics, so arranged that iron and bismuth, the most powerful of each class, stand respectively at the two ends of the series; the intermediate substances graduating on each side into air and vacuum, which are neutral as to both properties. Such series can at present be only approximate, but it serves to indicate points of relation, either by resemblance or contrast, for future inquiry.

The fact that atmospheric air and all aeriform bodies possess this neutral state, forms a very interesting part of these discoveries; and we transcribe a passage from Dr. Faraday for the purpose of indicating the results more in detail, and of showing the importance he attaches to this observation:—

"That oxygen or nitrogen gas should stand in a position intermediate between the magnetic and diamagnetic classes—that it should occupy the place which *no* solid or liquid element can take—that it should show no change in its relations by rarefaction to any possible degree, or even when the space it occupies passes into a vacuum—that it should be the same magnetically with any other gas or vapor—that it should not take its place at one end, but in the very middle of the great series of bodies—and that all gases or vapors should be alike, from the rarest state of hydrogen to the densest state of carbonic acid, sulphurous acid, or ether vapor—are points so striking as to persuade one at once that air must have a great and perhaps active part to play in the physical and terrestrial arrangement of magnetic forces."

The most cursory view of the phenomena, so clearly and strikingly related, will show that Dr. Faraday does not overrate their importance as physical facts, and the remark at the close of the passage will suggest more especially the great general conclusions to which these researches may hereafter conduct. Of the three elements or parts associated together in the globe on which we dwell—the solid mass of the earth, the water of oceans and seas, and the atmosphere enveloping the whole—*each is differently characterized in its magnetic states and relations;* while electricity, under its particular form and function of magnetic power, pervades, as we have reason to believe, all three parts, whatever may be its extension and influence in space, or on worlds beyond. Relations such as we describe cannot be accidental, vague, or inoperative; and in the progress of recent research we have a justifiable assurance that they will be followed into still higher and more important results.

These more general views press us forward to the latter part of the remarkable papers of which we have sought to give an analysis to our readers. Dr. Faraday well recognizing, as we have seen, the greatness of the subject, closes them by a few pages of general applications, which we strongly advise every one to peruse who feels interest in these topics of inquiry. Such applications are necessarily in part speculative; but it is speculation sanctioned by a foundation on strict experiment, and which we might happily vindicate by the expression of Huyghens, "there are some studies so noble and sublime, that it is a glory to arrive even at probability in them."

In one instance only do we find our author passing somewhat beyond what we think to be the justifiable limits of physical inquiry. This is, when referring to a prior speculation, published two years ago, on the nature of matter as known to us by certain powers only, without including of necessity anything beyond these—a view having kindred with that of Boscovich, and which he considers to be strengthened by the phenomena now described. We confess that we feel some reluctance in mixing this inference with others derived from these researches. All great advances in physical knowledge have been made by ascending from particulars to generals, and Dr. Faraday's own discoveries are among the happiest illustrations of this principle. They are based on strict inquiry; and if chance ever intervenes to disclose new facts, it is in the way denoted by D'Alembert: "Ces hasards ne sont que pour ceux qui jouent bien." We view with a sort of jealous apprehension every approach to the converse method, the abandonment to which frustrated all that the genius of ancient Greece might have done for the progress of natural science. No man has better title than Dr. Faraday to push speculation beyond the frontier of experiment; but we prefer that he should continue, what he has hitherto been, an eminent example to others of genius submitting itself to the strictest laws of philosophical inquiry.

A few only of the general deductions at the close of these papers we have space to notice, and this we may best do in the words of the author, with some slight abridgments:—

"The amount of the new power in diamagnetic substances seems to be very small, when estimated by its dynamic effect; but the motion it can generate is perhaps not the most striking measure of its force; and it is probable, when its nature is more intimately known to us, other effects produced, and other indications and measures of its power, will come to our knowledge, and perhaps even new classes of phenomena will serve to indicate its operation. It cannot for a moment be supposed that, being given to natural bodies, it is either superfluous, or insufficient, or unnecessary. It doubtless has its appointed office, and that, one which relates to the whole mass of the globe; and it is probably because

of this relation, that its amount is necessarily so small in the portions of matter which we handle and subject to experiment. And small as it is, how vastly greater is this force, even in dynamic results, than the mighty power of gravitation, which binds the whole universe together, when manifested by masses of matter of equal magnitude!

"When we consider the magnetic condition of the Earth as a whole, without reference to its possible relation to the Sun, and reflect upon the enormous amount of diamagnetic matter which forms its crust; and when we remember that magnetic curves of a certain amount of force, and universal in their presence, are passing through these matters and keeping them constantly in that state of tension, and therefore of action, we cannot doubt but that some great purpose of utility to the system, and us its inhabitants, is thereby fulfilled.

"If Saturn were a magnet, as the Earth is, and his ring composed of diamagnetic substances, the tendency of the magnetic forces would be to place it where it actually is.

"It is a curious sight to see a piece of wood, or leaf, or an apple, or a bottle of water, repelled by a magnet, or the leaf of a tree taking an equatorial position. Whether any similar effects occur among the myriads of forms which in all parts of the Earth's surface are surrounded by air, and subject to the action of lines of magnetic force, is a question which can only be answered by future observation.

"If the Sun have anything to do with the magnetism of the globe, then it is probable that part of this effect is due to the action of the light that comes to us from it; and in that view the air seems most strikingly placed round our sphere, investing it with a transparent diamagnetic, which therefore is permeable to his rays, and at the same time moving with great velocity across them. Such conditions seem to suggest the possibility of magnetism being thence generated; but I shall do better to refrain from giving expression to these vague thoughts, (though they will press in upon the mind,) and first submitting them to rigid investigation by experiment, if they prove worthy, then present them hereafter to the Royal Society."

The foregoing passages, taken from among others of similar kind, will show the nature and extent of the deductions to which these discoveries lead. We might subjoin a few such which occur to ourselves, while pondering on the several parts and bearings of these phenomena, were it not that we feel a sort of moral scruple in mixing casual suggestions, and the conjectures of the closet, with a great scheme of experimental inquiry, deliberately and laboriously pursued. It is throwing dice for discovery, where the prize is due only to zealous and persevering research. We are the rather disposed to this remark from thinking that we perceive at the present time a more than usual tendency, among those who wander round the borders of philosophy, to intrude their hasty speculations and guesses at the future, on the sober truths and realities of inductive science. It might be thought, on first view, that the magnitude and abstruse nature of the elements brought into modern inquiry would have obviated this consequence. But the fact is otherwise. In physics, as in morals, it is far easier and more seducing to deal with principles and generalities than to reduce them to practice and experiment; and the many ignorant rush boldly and heedlessly upon the ground where wise men fear to tread.

It has been well and justly said that "he alone discovers a truth who proves it." Dr. Faraday's course throughout has been that of discovery upon proof. We feel entire confidence that his future researches will disclose results, going even beyond the vague speculations of which we have just spoken; and we trust that we shall have the satisfaction hereafter of recording these researches, and the discoveries which form their best reward.

THE ANGEL-WATCH, OR THE SISTERS.

A DAUGHTER watched at midnight
Her dying mother's bed;
For five long nights she had not slept,
And many tears were shed:
A vision like an angel came,
Which none but her might see;
"Sleep, duteous child," the angel said,
"And I will watch for thee!"

Sweet slumber like a blessing fell
Upon the daughter's face;
The angel smiled, and touched her not,
But gently took her place;
And oh, so full of *human* love
Those pitying eyes did shine,
The angel-guest half mortal seemed—
The slumberer half divine.

Like rays of light the sleeper's locks
In warm loose curls were thrown;
Like rays of light the angel's hair
Seemed like the sleeper's own,
A rose-like shadow on the cheek,
Dissolving into pearl;
A something in that angel's face
Seemed *sister* to the girl!

The mortal and immortal each
Reflecting each were seen;
The earthly and the spiritual,
With death's pale face between.
O human love, what strength like thine?
From thee those prayers arise
Which, entering into Paradise,
Draw angels from the skies.

The dawn looked through the casement cold—
A wintry dawn of gloom,
And sadder showed the curtained bed,—
The still and sickly room:
"My daughter!—art thou there, my child?
Oh, haste thee, love, come nigh,
That I may see once more thy face,
And bless thee, ere I die!

"If ever I were harsh to thee,
Forgive me now," she cried;
"God knows my heart, I loved thee most
When most I seemed to chide;
Now bend and kiss thy mother's lips,
And for her spirit pray!"
The angel kissed her; and her soul
Passed blissfully away!

A sudden start!—what dream, what sound,
The slumbering girl alarms?
She wakes—she sees her mother dead
Within the angel's arms!
She wakes—she springs with wild embrace—
But nothing there appears
Except her mother's sweet dead face—
Her own convulsive tears.

From the Boston Daily Advertiser.

REV. DR. SCORESBY.

Mr. Hale:—The Rev. Dr. Scoresby, of Bradford, in Yorkshire, England, is personally known to many of your readers. No traveller from his country has left behind him, in this, remembrances of more cordial esteem. With intelligence and acquirements, such as do honor to the Established Church of which he is a minister, what endeared him still more to those who had the happiness of his acquaintance was his genial and comprehensive philanthropy. We have national faults and foibles enough, Heaven knows; and a mind like his could not be insensible to them. But he was not one of those who "journey from Dan to Beersheba, to report that all is barren." He seemed to come with the generous and Christian purpose to see and greet all that was good, and to carry it away for diffusion and increase.

Since his departure, he has become much more widely known among us by the publication of his little book, entitled "American Factories and their Female Operatives," containing a full account of the arrangements existing at Lowell for the comfort, respectability, and improvement of the workwomen, with a view to introduce a similar system in his own country, and particularly in the large manufacturing town of which he is Vicar, and to check the various evil tendencies which in England have been found to beset the manufacturing population. I have wept in my time over many a work of fiction, but never have I been moved to deeper feelings than by perusing that little treatise, and reflecting on the enterprise which it set on foot. And never did I see more reason to bless God for casting my lot among the men whose wisdom and benevolence originated the plans which it describes. I have lived more than half a century among those men. Many a day have I fished in the Concord river at its confluence with the Merrimac, before they had ever made a water-wheel stir its surface. I know all about that intelligence and enterprise which have won for them such a golden harvest, and that munificent public spirit with which they have dispensed it. But more—ten times more—than all their wealth, do I envy them the consciousness that they have pursued their ends in no merely selfish spirit—that while looking after their interests they have cared not less for the obligations which attended their great power—that they have owned the brotherhood of humanity in those who did their work, and cared for their happiness and their souls. They have explored the way to that blessing of God, which maketh rich, and addeth no sorrow therewith.

No one who sets himself about doing good, can guess how far the good is going to extend. When the factory system was introduced in this neighborhood, the union of factory labor with respectability and innocence of life was an unsolved problem. The experience of England was against us, and the best men were uneasy about the effect of such a dangerous form of industry upon the decent habits of our New England life. The merchant builders of Lowell took the matter in hand, and executed it with the same sagacity and success that have attended their other undertakings. They demonstrated that manufacturing labor on a great scale, in a crowded city, can coëxist with as high a condition of physical, mental and moral well being as any other form of industry. So far, so good, and very good it was. But that is not the end. By and by, from the centre of manufacturing wealth and its attendant woes, comes a philanthropist with a mind to estimate their work, and a heart to feel its excellence and long for its extension. And he goes away to exert himself with the authority of high station, the force of great talent, and the advantages of local knowledge and influence, to transplant the benefit to a foreign land.

I have been led to these remarks by reading a sermon "on the Condition and Prospects of the Female Operatives," preached by Dr. Scoresby at his parish church in November last. It was listened to by an audience of two thousand of the factory women, of whom there are twelve thousand in Bradford, and was then published to meet the wish of "many of that class who were not able to gain admission into the church." The object was to explain and recommend to them the plans proposed by Dr. Scoresby and his friends for their benefit, and secure their own coöperation. Taking for his text the words of Moses to Hobab, "Come thou with us, and we will do thee good," and commencing with an introduction in a candid and friendly tone well suited to inspire the confidence which was the first thing to be secured, Dr. Scoresby next proposed to speak of three particulars; "1. As to whom the invitation to do you good comes from; 2. "As to the plan proposed for your good; and 3, As to your part in the plan in order that we may be able to do you good."

The *invitation*, he says, comes not only from himself, but from all the clergy and dissenting ministers of the place, from many of the master manufacturers, and from "the leading classes of society generally of both sexes," who had been brought to take an interest in the object. "The leading principle in the *plan*," he represents to be, "to help you to help yourselves;" and the particular measures comprehended in it are the following, viz.: the establishment and registration of "comfortable *lodging-houses* or *boarding-houses*;" the establishment of a *general sick club*, of *evening schools*, and of *savings banks*; and the "careful superintendence of the scheme by a *Board of Management*," aided by a committee of ladies. Passing to the part to be done by the operatives, the preacher enforces the usefulness and importance to themselves, both for life and for eternity, of the coöperation desired; and having with equal plainness and delicacy made an appeal to their consciences and self-respect, he urges on them successively "a careful regard to a high tone of chaste and moral principle;" "a careful regard to good character in associates;" a careful selection of "places of abode," and of "places to work," with a view to their moral influences; "care to discountenance and avoid the society of those of their own class, who yield themselves to the paths of profligacy," and, finally, securing, as far as possible, the facilities offered for instruction in the various evening and Sunday schools." A few words of kind but cautious commiseration and encouragement to those who have already fallen into error, close this excellent discourse,—a model in its kind for plainness, force, a pastoral gentleness, authority, and faithfulness.

This is a great enterprise. Its prospects of success are gratifying. Dr. S. says in his preface, "From what has already been shown of the feelings of the factory girls of Bradford, we may consider, I do believe, the doubts of success as answered." If successful in this place, the experiment will be repeated, and will succeed elsewhere. The man

who shall reform the factory life of England, and supplant shiftlessness, filth, unchastity, ignorance, disease and wretchedness among those hundreds of thousands of people, by order, cleanliness, purity, health, self-respect, and domestic comfort, will have an enviable place in the history of a grateful country, and the reverence of all Christian men.

P.

WOMAN'S COURAGE.

The annals of 1780 record a remarkable case where a long course of robbery was brought to light, and a frightful murder prevented in the very act, by a woman's courage. Abraham Danford, the chief criminal in the transaction, himself detailed with minute accuracy his course from the first act of dishonesty to the ferocious outrage which cost him his life. The skill and tact requisite for carrying out his first plans hardly prepare us for the more ruffianly atrocity which concludes his career.

At that period, money was chiefly sent by parcel, and an ingenious plan occurred to him by which he could, with little risk, put himself in possession of any parcel which struck him as likely to be of particular value, while it yet lay in the carrier's office previous to delivery. "The method (says his confession) which I chiefly put in practice, was forging the post-marks of the different towns, which I put on a piece of paper, made up as a letter, and then went to the inns where the coaches came, and heard the parcels called over; then went to a public-house near, and wrote the direction of the letter the same as was on the parcel I had fixed on. The book-keeper seeing the direction the same, and the post-mark on it, they usually gave me what I asked for, on paying their demand."

The addresses on the parcels would give him some idea of their value, and of six of these thefts that he records, five contained considerable sums of money. Among his first experiments, was one on Messrs. Smith, Wright, and Grey, bankers, by which he got a parcel with 500*l.* enclosed. Having gone on a considerable time with impunity, and become an adept at forging, he now practised upon the same house in another way, by forging an accepted bill, which he lodged in the bank till it became due. This pretended bill he directed to an empty house in Water-lane, Blackfriars, and some days before it was due, he hired this house, and with an imprudent show of haste and anxiety, requested for the key, under pretence of getting it aired before he entered upon it. The owner of the house being made acquainted with the haste of his new tenant, and not much liking his appearance, now went to one Mrs. Bouchier, the landlady of a public-house opposite, of whose good sense he had had reason to form a high opinion, and requested her to keep watch upon the man's proceedings, which she promised to do.

For some time, nothing remarkable happened, but on the day on which the bill became due, Messrs. Smith, Wright, and Grey despatched one of their clerks, William Waits, a quaker, to pay the money to the person indicated in the bill. It is not quite certain whether Danford meditated violence beforehand; it may be that the man's subdued and defenceless appearance suggested the attack at the moment; but the presence of an accomplice, prepared for any atrocity, leads rather to the supposition that the crime was premeditated; and that taking for granted that a clerk calling to discount a bill might have other errands of the same kind before him, and, therefore, much money on his person, they had planned, in cold blood, to rob and murder him.

Mrs. Bouchier, who, after the instructions she had received, was on the watch, observed on that day two men enter the house, and open the parlor window. Some time after, a third person, a quaker, came up, knocked at the door, was admitted, and the door closed and fastened behind him. Something in the circumstances and the appearance of the first men excited her suspicion, and she kept her eye and her attention fixed upon the house. Presently she thought she heard a strange noise proceed from it, not loud, but which she could not account for. She crossed over the street, and listening attentively, soon heard the word "murder" pronounced in a hoarse, faint voice, succeeded by a kind of groaning, which very much alarmed her; and looking through the key-hole of the house door, she saw two men dragging the unfortunate quaker down the cellar stairs. On this, she screamed out to the passers-by, that they were murdering a man within the house, and while she knocked violently at the door, called upon the people in the street to break it open; but with that apathy which is sometimes met with in such a crisis, no one would stir, or regard her exclamations. Enraged at their stupidity, she broke open the parlor window herself, and as she was forcing her way through, one of the villains who had been interrupted and alarmed by the knocking, opened the door, and was running off at full speed. At the sight of him, however, the lookers-on roused themselves, set up a cry of stop thief, and presently made him their prisoner. The other ruffian Mrs. Bouchier herself seized by the throat, and dragged him across the street to her own house. It appeared that the villains had first robbed the poor man of his pocket-book, and then, to stop his cries, had nearly throttled him, while they were hurrying him down the back-cellar stairs, there to complete their crime by his murder. A design which would certainly been carried out, but for this woman's fortitude and presence of mind, thus providentially interfering for his protection.

When the two prisoners were brought before the lord mayor for examination, William Waits, as a quaker, refused to give evidence upon oath of the assault that had been made upon him. Arguments were used in vain, and it was much feared that the villains would escape for want of sufficient evidence against them. In the end, however, Mrs. Bouchier's testimony, and that of her assistants, was deemed conclusive. The prisoners were condemned and executed, with several others, at Tyburn, having previously made great professions of penitence and contrition.—*Sharpe's Magazine.*

From the People's Journal.

ADVENTURE OF THREE MIDSHIPMEN IN MEXICO.

EXTRACT FROM A PRIVATE LOG-BOOK.

The little patch of burning hot sand and desolation, called the Island of Sacrificios, shall not cause me to delay my story; although I would fain stop to say a few words of the squalid garrison at the dilapidated fort, and of its *Commandante*, who sat all day in his shirt, smoking, and wearing no other clothes, except a cloak of precisely the same length. However, I will pass on, and even forego the description of some of the horrors of yellow fever—of certain ruins supposed to have been ancient temples—and of the wreck of human skeletons and

other bones which strewed this miserable sea-shore. I am speaking of the period when the old Spaniards still held the castle of San Juan Ulloa, just before their final expulsion.

A very absurd misunderstanding, which might have cost a life or two, concluded this my first visit to Sacrificios. As it may serve for an illustration of the fanaticism, ignorance, and absence of all accurate war arrangements among the Mexicans at this time, (to say nothing of the foolish conduct of three English midshipmen,) I may as well relate it.

From the vacant saloon of the unbreeched commandant we strolled away over the little sandy desolation, and, soon finding the heat quite unbearable, went down to the sea and bathed. Binding silk handkerchiefs over our heads, to protect them from the scorching rays of the sun, we remained swimming about, and sometimes sitting close in shore with only our heads out of water, during an hour and a half, or more. As we had discovered a small spot of shadow under a sand bank where we could dress at leisure, the next thing we did was to extend ourselves upon the sand, with the usual tropical indolence, and take a nap. We slept so much longer than we had intended, that when we awoke the sun was down. We walked along the beach towards the point where we expected to find our boat, which had been ordered to return for us, and on the way we picked up the skeleton of a horse's head, the bones being entire, teeth and all, and blanched as white as chalk. Mr. A— (a middy, of sixteen) persisted in carrying it with him, saying he should take it to the doctor on board, as a specimen of the unnatural productions of the island.

We had not gone far before we were hailed by a sentry on one of the outposts. No doubt we presented an odd and suspicious appearance enough to the eye of this unusually vigilant Mexican. Even if he had seen us arrive and pay a visit to the fort three or four hours ago, he could never have supposed it was the same party; because nobody "in their senses" ever remained five minutes longer upon this sandy hot-bed of pestilence than he could possibly help. What must he have thought? We had each of us got a blue jacket over our heads, with the arms dangling down, as languidly as the sensation which had induced us so to place them, the compression round the arm having been unbearable; and on the top of this one of the party was carrying the skeleton of a horse's head as though it had been his own, his face being hidden by the hanging jacket! The shades of evening were around us. No wonder, therefore, that the poor sentry (a pure Indian, not a half caste) was astounded at the sudden appearance of such a figure marching along the margin of the sea, with two attendants! To the call of the sentry we made some idle reply or other; in fact, we did not know the pass-word, and had never once thought of asking for it. He challenged us a second time. We answered, more foolishly, if possible, than at first, and with ill-suppressed merriment; so down he came running with his musket and fixed bayonet, and demanded who we were—how we came—what we came for—where we were going—and what was *that?* The figure at which he pointed stood quite still; and I am by no means sure that the young gentleman underneath the skeleton skull did not feel himself in a most uncomfortable predicament. Thinking to pass it off as a jest, and at once relieve the soldier's mind from all further responsibility, I answered pleasantly, as I thought, that "it was only one of the gods of Ancient Mexico, whom we had found among the ruins!" However ill-judged and unbecoming such a reply may have been, it certainly was a compliment, rather than otherwise, to most of the hideous gods in question. But whether it was the *purity* of his aboriginal Indian blood, my bad Mexican *patois*, some strange misconception of personal insult, or an unmixed furor of fanatical rage, I know not; but, uttering the word "Dios!" as if in horror, he in an instant discharged his piece in the air as a signal. We were quite unarmed, not having even the little ornamental midshipman's dirk with us; so away we bolted along the sands, to make for the boat, the discomfited Mexican god now carrying his huge head in his arms, and the sentry pursuing us with his bayonet charged, and crying out in a shrill voice, "*Hoo-dee-os Cas-tee-yaa-nos! Hoo-dee-os Cas-tee-yaa-nos!*" (Jews of Castile! Jews of Castile!)

A signal musket answered from the fort, and just as we came in sight of our boat, the *commandante*, still in his short cloak-shirt, with his drawn sword in his hand, and followed by the whole of his squalid garrison, appeared upon the top of the nearest sand bank. Our sailors, seeing that there was something "amiss," instantly pulled away to meet us—ran the boat ashore—and before the *commandante* and his ragamuffin guard could make their way down to the water's edge, we had scrambled in, and pushed off into deep water. *Hoo-dee-os Cas-tee-yaa-nos!*" screamed the sentry as he joined the guard. "*Fuego!*" cried the *commandante;* and "pop! pop! puff!" went four or five of the rusty muskets, the rest only flashing in the pan, if they did that. One bullet struck the boat's stern, and a bit of burning wadding flew into the neck of the bow oar. We answered this ridiculous attempt at a volley by a loud shout of derision, which was prolonged into a screaming crow by the Mexican god, who lifted up his white head in the air; but perceiving that the soldiers were all busy reloading, he suddenly put down his head, and called to our men, "Pull for your lives!" At this sudden change of tone, the old coxswain, who always went with "the young gentlemen's boat," laughed so excessively that he almost rolled over the boat's side. They fired again, but—nobody was hurt.

Ex-Mexicano.

Vital Statistics.—The importance of temperance—not merely in its ordinary acceptation, but as implying entire abstinence from intoxicating drinks—has been strikingly exemplified by the experience of the Temperance Provident Institution, whose members are required, by the conditions of assurance, to be *total* abstainers. On comparing the number of deaths that occurred in several of the most successful Life Offices, during the first five with the number that occurred during the same period years of their existence, among the members of the Temperance Institution, we find the difference to be greatly in favor of the latter; as will be seen by the following statement:—

	LIFE POLICIES.		DEATHS.		
A issued	944	and had	14,	being 15 per 1000.	
B "	1901	"	27,	" 14	"
C "	838	"	11,	" 13	"
D "	2470	"	65,	" 26	"
T. P. I.	1596	"	12,	" 7½!	"!

That this result is not to be attributed to favorable accident, or aught else than the operation of a salutary and life-preserving practice, becomes the more apparent when it is considered that every passing year more fully confirms the illustration already given

—and the broader the basis of the experiment, the more conclusively the great fact becomes established. Through a period of thirteen months, from the 5th of July, 1845, only *two* deaths occurred among the whole number of the assured; which reduces the deaths, up to August 6, 1846, to an average of only 3½ per thousand in each year! During the past twelve months only four deaths have occurred, though between 400 and 500 new members have been admitted; and the claims are lighter in number and amount than for the preceding year. These facts, as bearing upon the beneficial effects of abstinence from alcohol, are overwhelming. And they cannot be too highly or too promptly regarded by those who seek for themselves and their dependents some provision to mitigate the calamities which flesh is heir to.—*People's Journal.*

Emerson's Poems.—The poems of Ralph Waldo Emerson have been published by James Munroe & Co., of Boston. Mr. Emerson is a brilliant writer, both in prose and verse, though perhaps, as a poet, too reflective, too *subjective*, the modern metaphysicians would call it, to suit the popular taste. His little address, in verse, to the humble-bee, is, however, one of the finest things of the sort—a better poem, in our judgment, than Anacreon's famous ode to the cicada. We copy one of the more generally pleasing of these poems:

GOOD-BYE.

Good-bye, proud world! I'm going home:
Thou art not my friend, and I'm not thine.
Long through thy weary crowds I roam;
A river-ark on the ocean brine,
Long I 've been tossed like the driven foam;
But now, proud world! I'm going home.

Good-bye to Flattery's fawning face;
To Grandeur with his wise grimace;
To upstart Wealth's averted eye;
To supple Office, low and high;
To crowded halls, to court and street;
To frozen hearts and hasting feet;
To those who go, and those who come;
Good-bye, proud world! I'm going home.

I am going to my own hearth-stone,
Bosomed in yon green hills alone—
A secret nook in a pleasant land,
Whose groves the frolic fairies planned;
Where arches green, the livelong day,
Echo the blackbird's roundelay,
And vulgar feet have never trod—
A spot that is sacred to thought and God.

O, when I am safe in my sylvan home,
I tread on the pride of Greece and Rome;
And when I am stretched beneath the pines,
Where the evening star so holy shines,
I laugh at the lore and the pride of man,
At the sophist schools, and the learned clan;
For what are they all, in their high conceit,
When man in the bush with God may meet?

N. Y. Ev. Post.

CORRESPONDENCE.

Some of the papers on slavery, with which this number begins, are well deserving of the attention of our Southern readers. Arguments which *convince them*, are more likely to be effective than reproaches which irritate them and prevent their appreciating the good arguments by which those very reproaches are sometimes accompanied.

The article on the Present State of Physical Science will unfold, dimly perhaps, to the minds of our younger readers, some of the wonderful things to which the human intellect is capable of reaching. Let not those who do not understand all of it, be induced thereby to lay it aside. Enough may remain impressed upon the imagination at least, to be of help to their intellectual growth.

The little poem, The Angel Watch, reminds us of a story we heard from the late Mrs. Logan, of Stenton, of another friend of ours, whose name we *will* mention, as he is too far off to resent it. The elder Doctor Betton, whose attention to the poor in his neighborhood was greater than that which he paid to the wealthy, (for to the latter he did not convey nourishing food and wine,) had long watched the declining health of a poor widow, who lived almost alone; her only companion and nurse being a daughter of about sixteen years of age. Coming to the house as his last place of call one night, the good physician found the daughter worn out with anxiety and much watching, and knowing that the mother would not live through the night, and desirous of restoring the overwrought heart and brain of the child, he insisted that she should go to rest, promising her that he himself would watch by her mother's side till she should return. In the middle of the night the mother died, and the doctor sat in the chamber of death till the dawn of morning brought the daughter back to it.

NEW BOOKS.

Harper & Brothers continue to issue numbers of the Pictorial History of England, and we do not know of many more valuable works of the day. They have issued a second edition of A System of Intellectual Philosophy: by the Rev. Asa Mahan, President and Professor of Intellectual and Moral Philosophy in the Oberlin Collegiate Institute.

Wiley & Putnam have published, as Nos. 93 and 94 of their Library of Choice Reading, Travels in Peru, by Dr. J. J. Von Tschudi. This interesting work will be known to the readers of the Living Age by a review of it, which we copied some months ago.

The Living Age is published *every Saturday*, by Littell & Payson, at No. 165 Tremont St., Boston. Price 12½ cents a number, or six dollars a year in advance. Remittances for any period will be thankfully received and promptly attended to. To insure regularity in mailing the work, remittances and orders should be addressed to the office of publication as above.

Twenty dollars will pay for 4 copies for a year.

Complete sets to the end of 1846, making eleven large volumes, are for sale, neatly bound in cloth, for twenty dollars, or two dollars each for separate volumes. Any numbers may be had at 12½ cents.

Agencies.—The publishers are desirous of making arrangements in all parts of North America, for increasing the circulation of this work—and for doing this a liberal commission will be allowed to gentlemen who will interest themselves in the business. But it must be understood that in all cases payment in advance is expected. The price of the work is so low that we cannot afford to incur either risk or expense in the collection of debts.